

Passaic Valley Sewerage Commissioners

Commissioners

Donald K. Tucker, *Chairman*

Carl S. Czaplicki, *Vice Chairman*

Anthony W. Ardis

Frank J. Calandriello

Alan C. Levine

Angelina M. Paserchia

Kenneth R. Pengitore

Thomas J. Powell

Bryan J. Christiansen, *Executive Director*

James Krone, *Deputy Executive Director*

406764




Speakers

- Sheldon Lipke, *Superintendent of Plant Operations*
- Bob DeVita, *River Restoration Supervisor*
- Veronica Craw, *Scientist*
- John Rolak, *Hatch Mott MacDonald*
- Andy Caltagirone, *Industrial & Pollution Control Manager*



History & Environmental Programs of PVSC

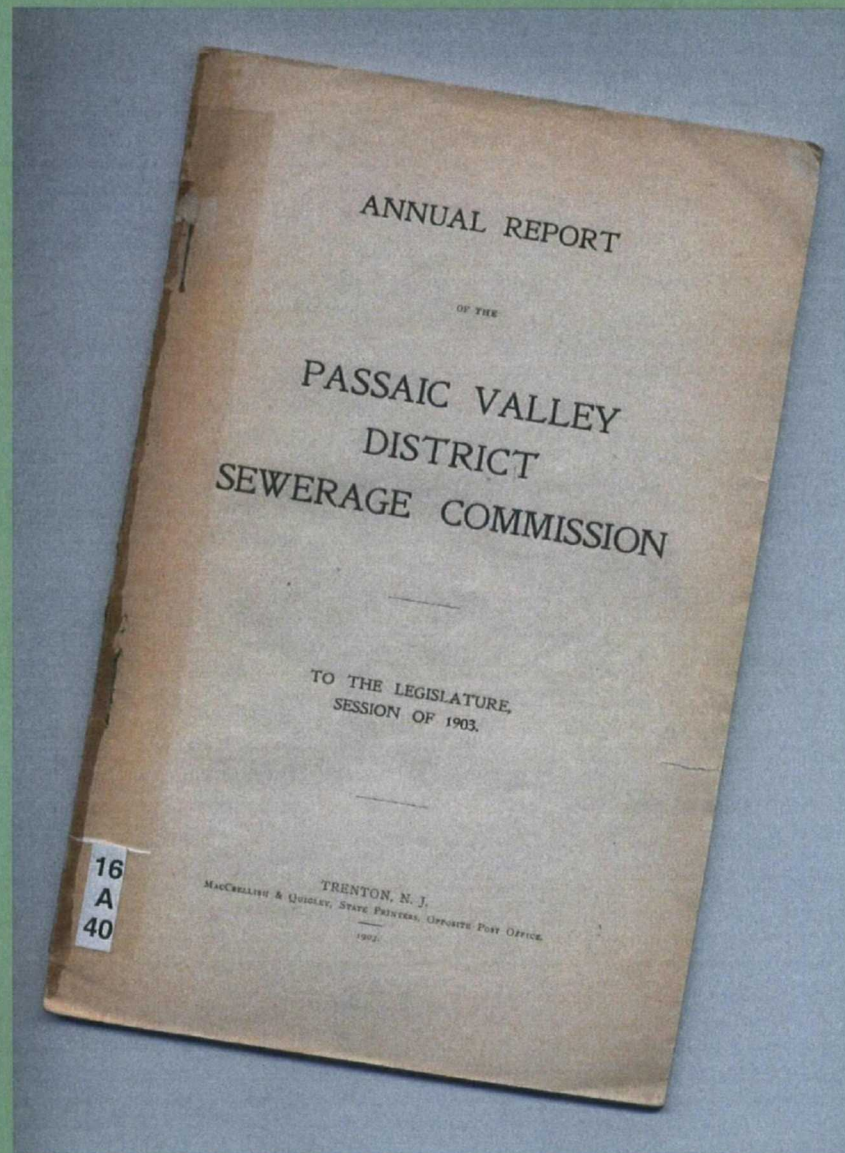


Sheldon Lipke, P.E.
Superintendent of Plant Operations

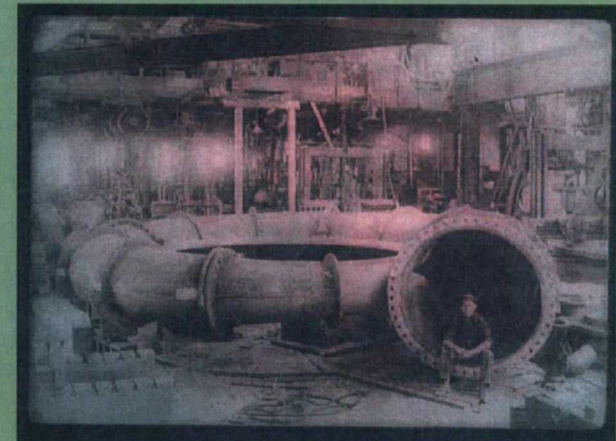
Created by the NJ Legislature in 1902

- **“...for the purpose of relieving the streams and rivers therein from pollution and to provide a plan for the prevention thereof...”**
- **Constructed an interceptor sewer and primary treatment plant with discharge to New York Harbor**
- **Start of operation in 1924**

1903 Annual Report

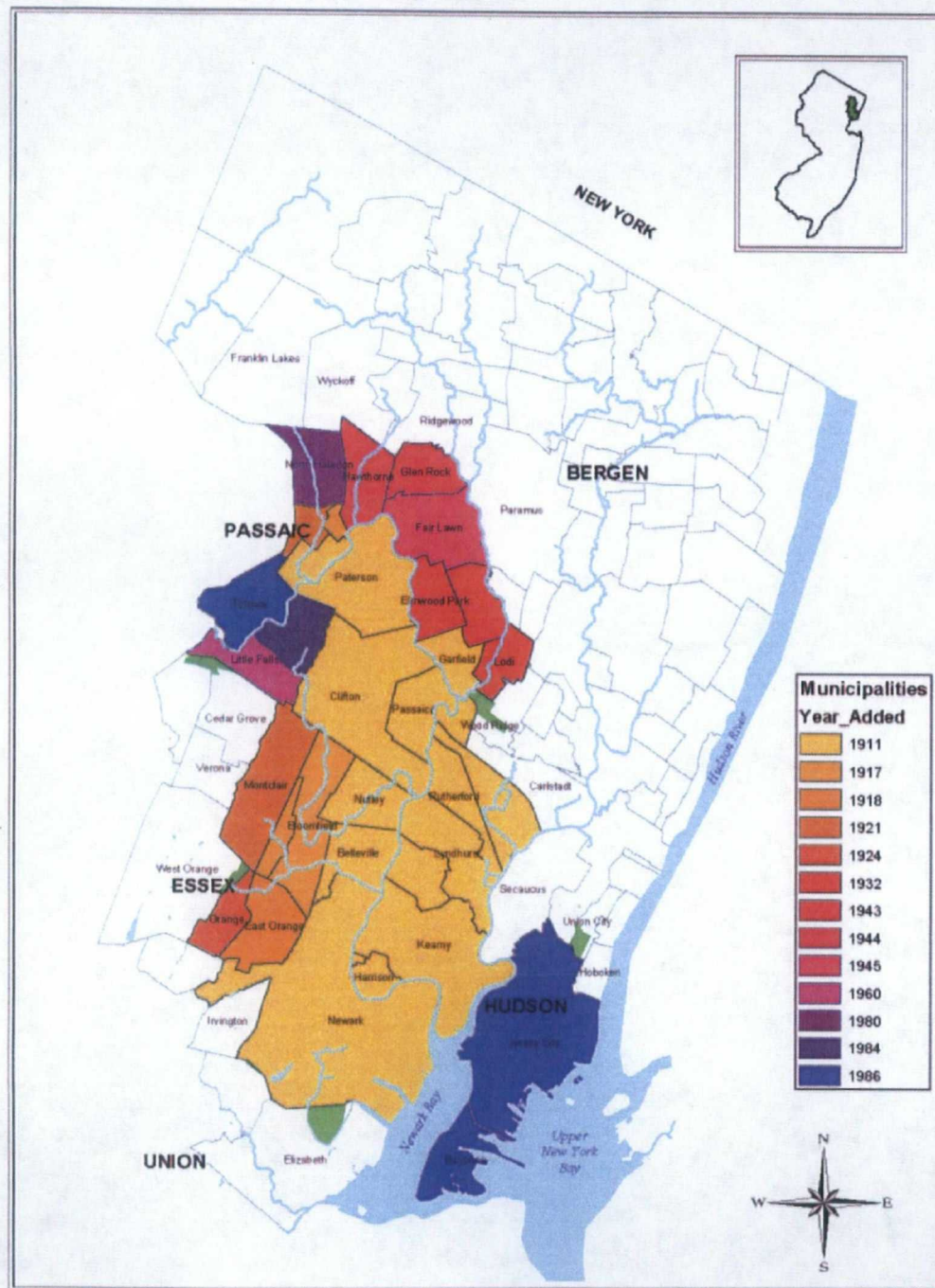


**Construction began on July 1, 1912
and the system came on-line in August of 1924**



PVSC District

- **48 Municipalities in Bergen, Essex, Hudson and Passaic Counties**
- **Population of 1.3 Million**
- **Six Congressional Districts**



Years When Municipalities Joined PVSC's Service Area

1911

Belleville
Clifton
East Newark
East Rutherford
Garfield
Harrison
Kearny
Lyndhurst
Newark

1924

Orange

1932

Lodi

1943

Elmwood Park
Saddle Brook

1944

Glen Rock
Hawthorne

1945

Fair Lawn

1960

Little Falls

1980

North Haledon

1984

West Paterson

1986

Bayonne
Jersey City

1917

Bloomfield
Glen Ridge
Prospect Park

1918

East Orange

1921

Haledon
Montclair

Congressional Representation

Scott Garrett, *District 5*

Bill Pascrell, Jr., *District 8*

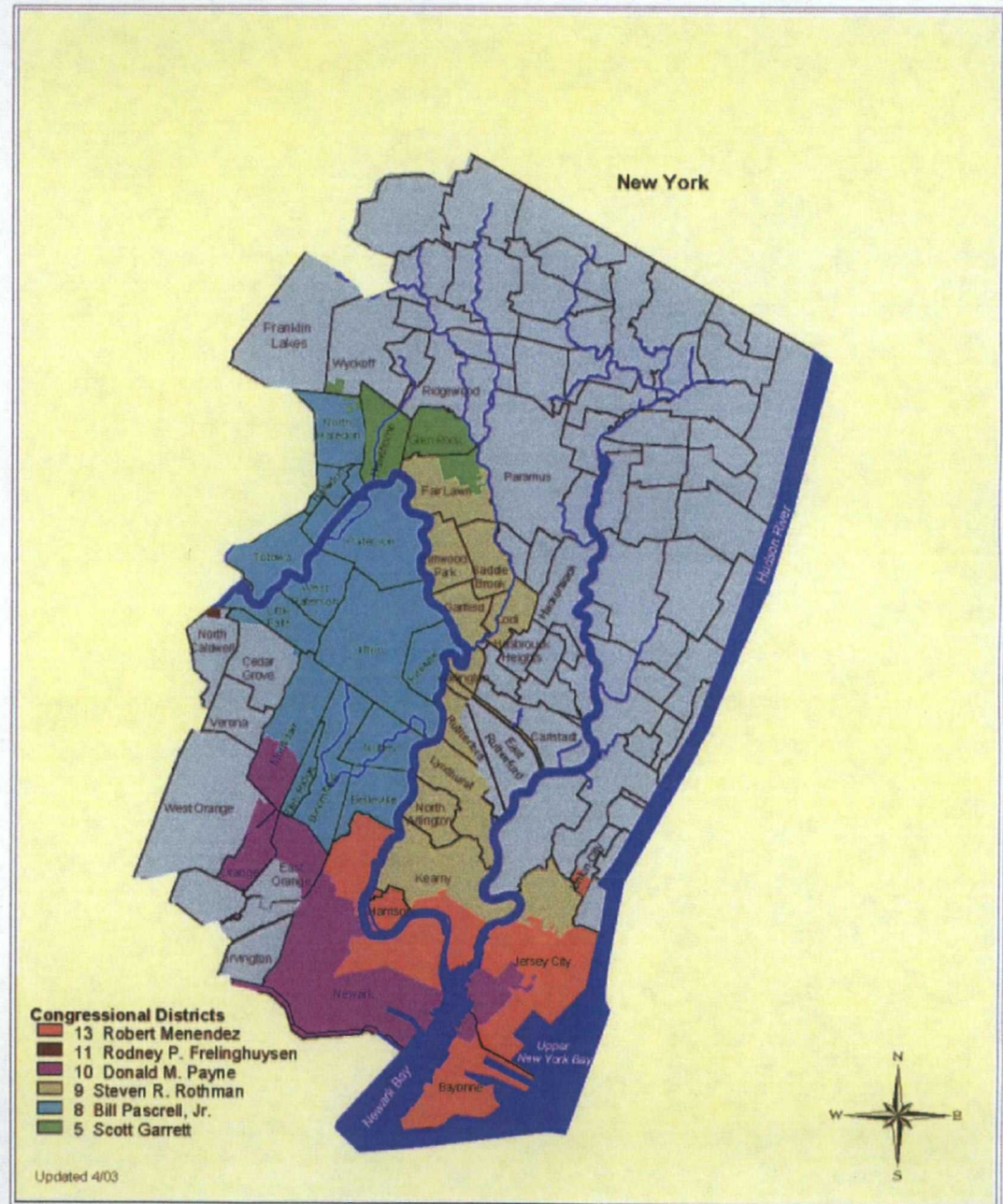
Steven R. Rothman, *District 9*

Donald M. Payne, *District 10*

Rodney P. Frelinghuysen, *District 11*

Robert Menendez, *District 13*

Portions of Congressional Election Districts Within the Passaic Valley Sewerage Commissioners' District



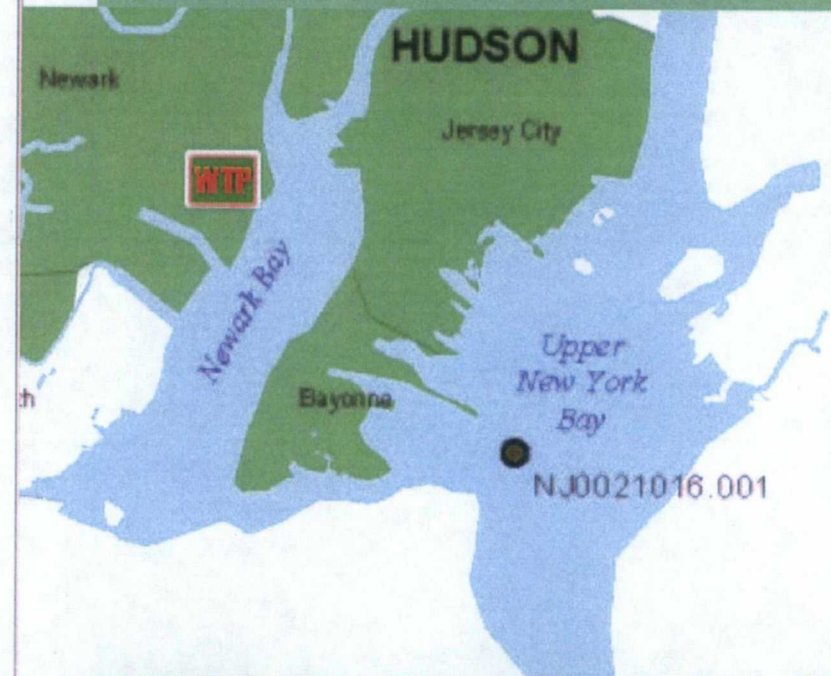
330 million gallon per day Wastewater Treatment Plant

- **Located in Newark, NJ**
- **Outfall at Robbins Reef in NY Harbor**

PVSC Service Area



The PVSC Treatment Plant & Outfall Location



NJDEP Permit Program

- **Plant Permit**

- contains discharge limits to receiving water
- “Nine Minimal Controls” for CSOs applicable to the wastewater treatment plant
 - Maximization of conveyance of wastewater to plant for treatment
 - Operate the POTW to treat wet weather flows without exceeding the capacity of the plant

PVSC's CSO Permit

- **Prohibits Dry Weather Overflows**
- **Prohibits Intrusion of Surface Waters**
- **Maximize Conveyance of wet weather flows to the plant**
- **Long Term Control Plan**
 - **Evaluate measures to increase conveyance to plant**

Municipalities CSO Permit

- Construct Solids and floatables control facilities *(req. of muni?)* *solids > 1/2 inch*
- Prohibit dry weather overflows
- Long Term Control Plan *(New Permit)*
PVSC & MUNI
 - Develop and evaluate controls to reduce discharge of pathogens to receiving waters
 - Develop and evaluate controls to reduce the volume of wet weather discharges



Harbor Estuary Program

- **Management Committee**
- **Pathogens Workgroup**
- **Toxics Workgroup**
- **Nutrients Workgroup**
- **Dredge Materials Management Workgroup**
- **CARP Workgroup**

NJ Harbor Dischargers Group

- **10 Northern NJ Wastewater Treatment Agencies**
- **Work cooperatively with USEPA and NJDEP on water quality issues**
 - **Nutrients sampling**
 - **Heavy metals sampling**
 - **PCB Trackdown at Linden Roselle Sewerage Authority**
 - **NJ Toxics Plan**







Passaic River/Newark Bay Restoration Program (1997)

- Program to restore the Passaic River and Newark Bay as a Recreational and Economic resource to the region
 - Increase wet weather treatment capacity from 368 mgd to 700 mgd by making process and equipment changes throughout the treatment plant
 - Cost of over \$100 Million
 - Not required in present permits → *Timing*

Major Changes/Upgrades to System

- **Municipalities adding solids-floatables control facilities**
 - Consolidating and reducing the number of overflow points
- ✓ ● **Several Municipalities have ongoing sewer separation projects**
- **PVSC completing preventative maintenance of the interceptor sewer lines**



Passaic River/Newark Bay Restoration Program



Robert DeVita
River Restoration Supervisor













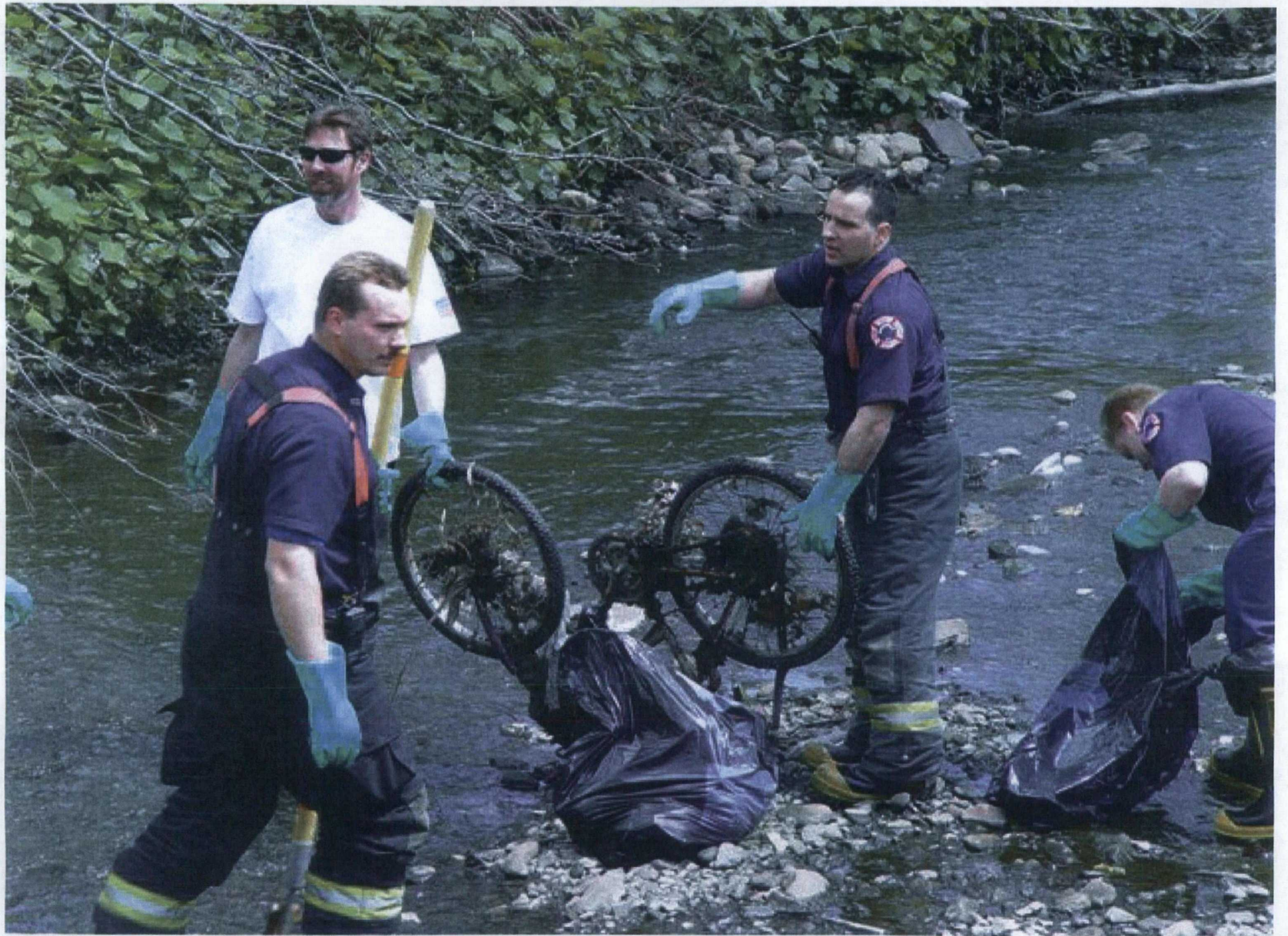


THREE PART STRATEGY

- **Volunteer Sponsorship**
- **Floatables Control**
- **In-House Cleanups**









THREE PART STRATEGY

- Volunteer Sponsorship
- Floatables Control
- In-House Cleanups

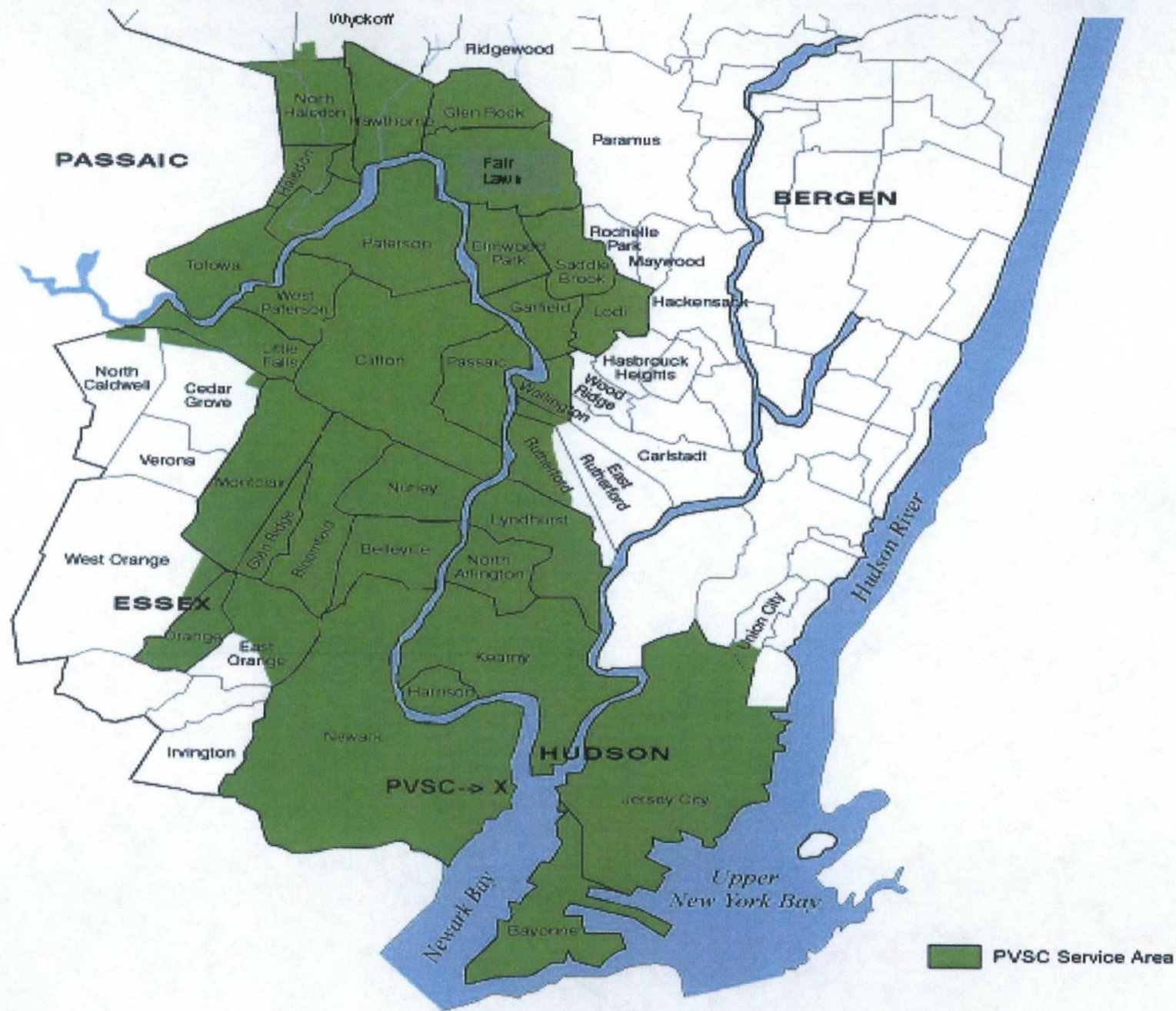








Passaic Valley Sewerage Commissioners

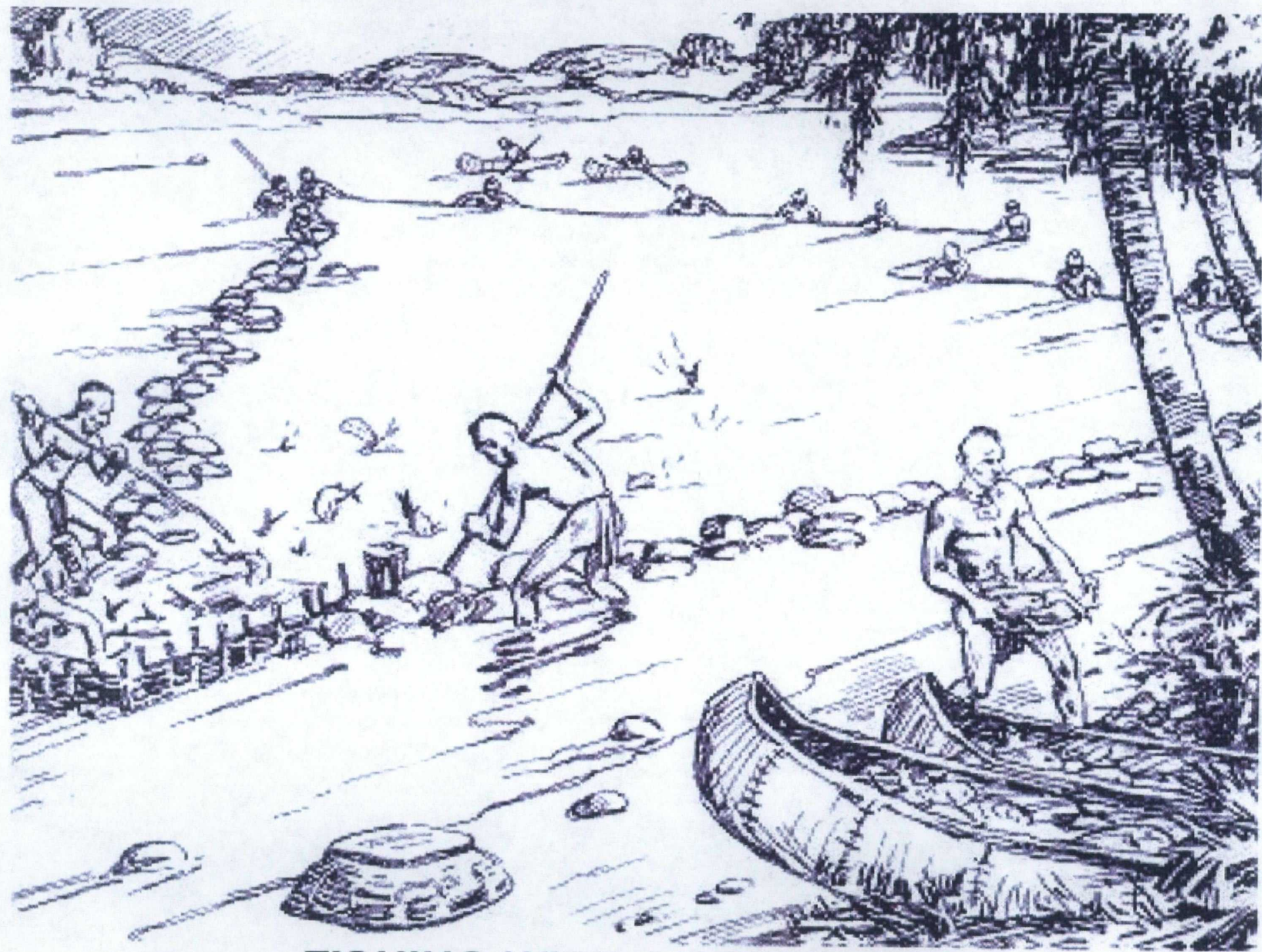




THREE PART STRATEGY

- **Volunteer Sponsorship**
- **Floatables Control**
- **In-House Cleanups**





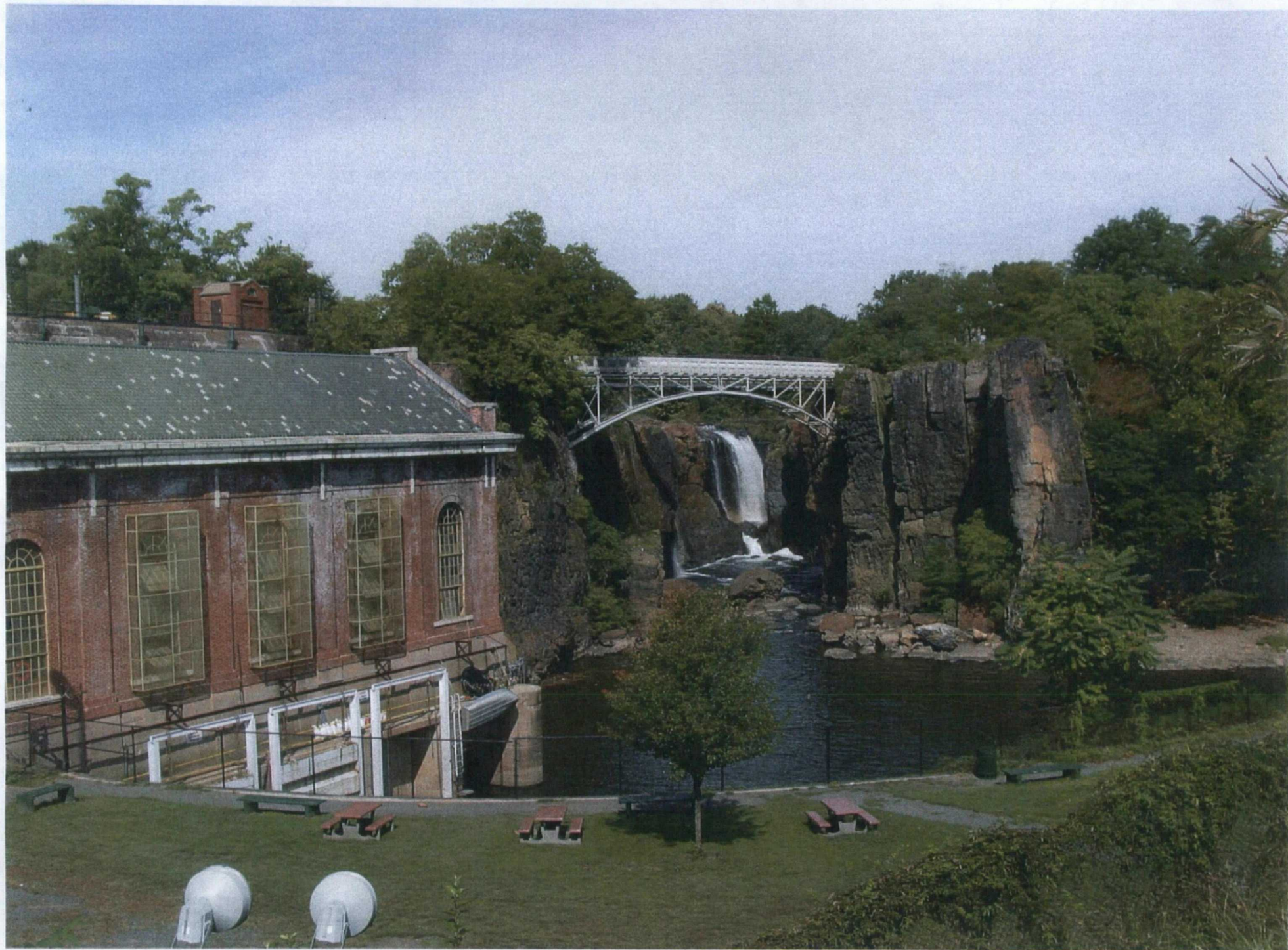














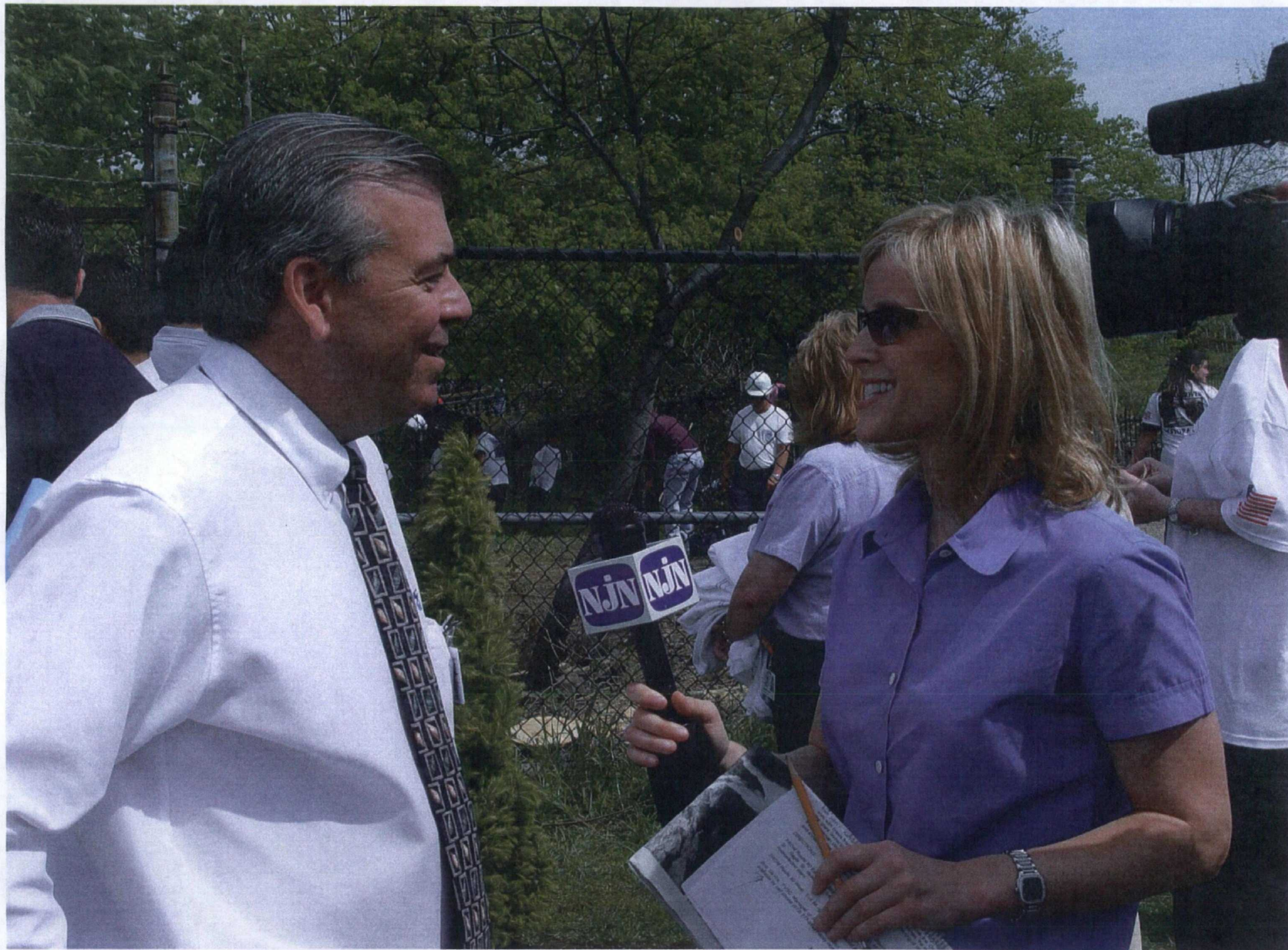














PATERSON

Falls cleaning



Photos by KEVIN R. WEXLER/Herald News

Brian Klein and Brian Davenport, right, of the Passaic Valley Sewerage Commissioners, tie a rope to a log Friday so that it can be pulled from the Passaic River near the Great Falls, Paterson. Scores of volunteers took part in the cleanup.

The Great Falls DRAIN JOB



KEVIN R. WEXLER/Herald News

Keith Stewart, an employee of the Passaic Valley Sewerage Commissioners, works at cleaning debris Monday on the Great Falls. Scores of volunteers will join the workers on Friday in the second phase of the project.

'This looks just beautiful,' Pascrell says

By NATE SCHWEBER
Herald News

It was the biggest cleanup in the history of the Great Falls, and mercy, did the Passaic River need it.

Even though the river hadn't been rerouted as cleanup organizers had hoped, hundreds of volunteers worked along the riverbanks stuffing trash and debris into hundreds of black hefty sacks. By midafternoon, the garbage overflowed one 30-foot and two 20-foot Dumpsters.

Attempts to divert the water from the falls through the neighboring hydroelectric station were unsuccessful because of to heavy



Quall Moore, 14, a Passaic River Restoration volunteer, takes a break from the river cleanup to admire the view.

who walked around the falls with Paterson Mayor Jose "Joey" Torres.

Employees of the Passaic Valley Sewerage Commission used a boat and a mini-backhoe to haul tree trunks and driftwood out of the river. The city's Department of Public Works used high-pressure hose to blast away graffiti near the falls. And hundreds of volunteers, around from the community and more than 100 from public schools, donned gloves and found everything except Jimmy Hoffa on filthy banks of the river.

"It's nasty," said 12-year-old Khadijah Younger, a sixth-grader at Jersey City's Hudson Co

Workers begin massive cleanup campaign

Drought spells good news for Passaic River cleanup

Bid to save ancient weir gets boost as waters drop

By STEVE STRUNSKY
THE ASSOCIATED PRESS

FAIR LAWN — Maybe not every drought has a silver lining. But the lack of precipitation in North Jersey has helped an effort to clean up the Passaic River by lowering the average water level and allowing work crews to get in spots usually too deep to reach, helping them pull muck from the muck.

It is also helping efforts to preserve an ancient fishing weir, or stream barrier, that some people think was used by the Lenape Indians more than 6,000 years ago.



"Car parts, tires with rims that sink down to the bottom, shopping carts by the hundreds. In Newark one time we pulled out a Honda Accord."

GARY MANICA, THE SEWERAGE AUTHORITY'S EQUIPMENT OPERATOR FOR THE CLEANUP



PVSC Receives Operation And Operation Excellence Award From U.S. EPA

The Passaic Valley Sewerage Commissioners (PVSC) has received the U.S. Environmental Protection Agency's (USEPA) *Operation & Maintenance (O&M) Excellence Award* in the Large Secondary Treatment Category in EPA's Region 2. The award qualifies PVSC to be considered for EPA's national O&M Excellence Award, given later this year.

"We couldn't be more pleased to receive this award recognizing PVSC's commitment to excellence in wastewater treatment," said PVSC Chairman Donald Tucker. "To qualify for this award, PVSC had to first operate for at least two consecutive years without a permit violation, no small feat for a plant that processes 300 mil-

every day."

"Once PVSC qualified, EPA chose to recognize us after reviewing our innovations in other areas, namely our Passaic River/Newark Bay Restoration Program, our Liquid Waste Acceptance Unit, and our Equipment Maintenance Management System," added Executive Director Robert J. Davenport.

PVSC created the Passaic River/Newark Bay Restoration program in 1998 to further its responsibility to improve water quality in the Passaic Valley. PVSC dedicated 12 staff members, as well as its two innovative surface skimmer vessels to the Restoration Program, which has organized over 200 clean-ups that have re-

debris from the surface and shorelines of Newark Bay, the Passaic River and its tributaries.

In order to provide the highest quality treatment services without increasing its user charges, PVSC created its Liquid Waste Acceptance Program in 1996. PVSC accepts non-hazardous liquid waste from outside its service area by truck and barge and utilizes excess plant capacity to treat this wastewater. Today, PVSC accepts over 150 trucks each day and four barges per month. Money generated from the program is placed into PVSC's general operating budget to reduce fees charged to member towns. PVSC's operating budget for 2002 is \$10 million less than

the fees charged to member town is \$30 million less than charges in 1992.

PVSC has also implemented a new state-of-the-art Computerized Maintenance Management System (CMMS) to give managers the ability to plan, schedule and document work on plant mechanical systems to store equipment history for analysis and future work. The new CMMS program has helped minimize equipment failures while maximizing operational dollars. "Making sure our equipment runs properly at all times is why we've t

erate at 100
ance for ov
years now,"
of the CMM
EPA's Od

of distinctions PVSC has garnered in the past five years. Also this year, PVSC was awarded the Association of Environmental Authorities Forward Thinking Award and the New Jersey Water Environment Association's Excellence Award.

In 2000 and 2001, PVSC was awarded the Association of Metropolitan Sewerage Agencies' (AMSA) prestigious Gold Award for Environmental Compliance for operating throughout the year without a permit or reporting violation. PVSC re-

ity," as well as the U.S. Small Business Administration's (USSBA) Vision 2000 Award. In 1999, PVSC also received AMSA's Public Service and Education Award and the USSBA's Friend of Small Business Award.

PVSC is New Jersey's largest wastewater treatment facility and is the fifth largest wastewater treatment facility in the nation. It processes nearly one-quarter of all the wastewater generated in New Jersey each day, covering a service area consisting of 48 municipalities in por-

Community News

Haul From River Cleanup Is a Shock to Volunteers

There were shopping carts, rusted bikes, car parts and tires, bottles, chairs.

Had volunteers continued to remove trash from the Passaic River after a three-hour cleanup this summer, they might have even come up with a kitchen sink.

In a relatively short period of



ROSALIE LONGO

time, the good Samaritans had filled a huge dumpster to the brim with nearly five tons of trash that they had removed from a portion of the river in Passaic.

The project, which was sponsored by the New Jersey Community Water Watch in cooperation with the Department of Earth and Environmental Sciences at Montclair State University, was an eye-opener for many volunteers.

One volunteer came upon a loaded gun that had been tossed into the river.

Though she has removed many unusual items during past cleanups, project organizer Melissa Sak said the weapon was a first.



Wade Sanders of Paterson, left, supervisor for the New Jersey Community Water Watch, gives volunteer Freddie

Good News

Tests have shown, the Passaic River is one of the most polluted rivers in the country," Sak says. "Certain parts of the river near Newark, have been declared as chemically polluted that human skin should not even make contact."

According to Sak, the organization is now targeting the Jersey coastline for cleanup. It is also involved in education and community outreach programs to educate area residents on the need for cleaner waterways.

If you would like to join in the effort, visit the organization's Web site at www.njcwwatch.org or call 973-277-1111.

■ Baptists in Wayne recently put sermons to work.

They reached out to disabled and elderly Vermont residents who needed desperate help with home repairs.

No job was too big or too small for the good Samaritans. In addition to painting, they

Among those taking part in the project were Brad and Jean Plaker of North Haledon; Christi Ventura of Haledon; Nanc McDonald, Jenny Ulrich and Kat Cano of Pompton Lakes; Katrina Kuebler of Hawthorne; Rach Brennan and Laura McFadden of Dumont; and Rocco Ghessi of Branchburg.

Also pitching in were Jonathan Radway, Bob Lick, Todd Colette Ryan Smith and Aly Bigsby, all of Wayne, and Angelo Festina, Paul and Jane Harlan, Silver Belair, Laura and Ryan Wetherhead Jonathan Wardrobe, Casey Keegans, Kristen Kowalski, Jenny and Emily Vanderberg, and Aileen Zimmerman, all of Cedar Grove.

■ Many times, foster children have to leave home with nothing, but clothes on their backs. The don't even have a tote bag or backpack.

Thanks to a number of caring individuals in the Passaic-Bergen area, infants and children in foster care will be better dressed and equipped in the future.



KEVIN R. WEXLER/SPECIAL TO THE RECORD

Volunteer Charles Curry of Roselle shoveling debris Friday from the Passaic River in Paterson into a trash bag. "If it helps the community, if it helps nature, I'm all for it," Curry said.

Cleanup crews restore pride to the Passaic

Program pitches in to clean up shoreline

Continued from Page A1

Sandra Lieberman with helping collect and bag other trash along the shoreline.

DeVita said the task force would likely continue its work today and tomorrow, "working our way along a U-shaped sandy section that loops behind Bayonne High School (extending down to 28th Street)."

Because high tide typically brings a variety of wood and de-

the PVSC, which treats Bayonne's liquid wastes, is aimed at improving the general cleanliness of area waterways, particularly to enhance recreational opportunities along the river.

"Boaters are more apt to use these areas as launch sites if they see that they don't have to negotiate through a lot of debris," DeVita said.

"There are some types of stuff that can kill a prop(eller) in a minute," he added.



Journal photo by Bill



GARY JUNG/STAFF PHOTOGRAPHER

Robert DeVita, supervisor of the River Restoration program, spoke to Hamilton school students last Monday morning about river cleanup projects at the Passaic River. Members of the Passaic Valley Sewerage Commission, the agency that presents the "Messy Marvin" educational outreach program, showed movies and slide shows about the necessity to keep rivers free from pollution.

SCHOOLS

Preaching pollution prevention

BY MORGAN KORN
Staff Writer

For a child growing up in today's society, making a difference in the world, large or small, may seem improbable. But Glen Rock children are learning quite the opposite - that they can, in fact, not only alter their own living surroundings, but another ecosystem's too. By following simple, everyday principles, such as recycling paper or conserving electricity, they're helping to preserve their world and ideally, protecting it for their own children as well. That's the goal of the Stream Keeper, Dream Keeper initiative taking place in the borough schools.

In one of the hallways at Central School, a poster stands apart from the other decorations - entitled "How We Can Help the Environment." Listed are thirteen actions that are feasible for elementary school children to accomplish, as

SEE PREVENTION, PAGE 56

River Of Debris



George Krusznis and Frank D'Antonio remove driftwood, tires and other trash from the Passaic River near Kearny. The larger pieces of driftwood are cut up with chainsaws and stored in the underbelly of their 30-foot government skimmer.

Photo by Tony Attrino



Shoreline Cleanup Accomplishments

- **Volunteer Cleanups**
 - 197 Cleanups Conducted to Date
 - 560 Tons of Debris Removed
- **In House Cleanups**
 - 134 Cleanups Conducted to Date
 - 1923 Tons of Debris Removed
- **677 Tons of Debris Removed through Skimmer Vessel Operations**

Shoreline Cleanup Volunteers

- 1) Hudson County's Camp 2000 Project
- 2) Lyndhurst Commissioner Peter Russo
- 3) Lyndhurst Department of Public Works
- 4) Kearny Councilwoman Carol Jean Doyle
- 5) Kearny Recreation department
- 6) Kearny Fire Department
- 7) Kearny Boy Scout Troop # 305
- 8) North Arlington Councilwoman Susan King
- 9) North Arlington High School Community Group
- 10) Queen of Peace High School Ecology Club
- 11) North Arlington Boy Scouts Troops
- 12) Passaic River Rowing Association, Kearny
- 13) Nereid Boat Club, Rutherford
- 14) NJ Community Water Watch, Rutgers-Newark
- 15) NJ Community Water Watch, Montclair State University
- 16) Weequahic Park Neighborhood Association, Newark
- 17) Watsessing Heights Neighborhood Association, Bloomfield
- 18) Greater Newark Conservancy
- 19) Bergen County Juvenile Community Service Program
- 20) Marcy Calabrese, Garfield Clean Cities Coordinator
- 21) Garden State Paper, Garfield, Rich Hampson, Environmental Engineer
- 22) Garfield High School Environment Club - Marcy Calabrese, Coordinator
- 23) Safas Corporation, Darell Hill, Coordinator
- 24) St. Theresa Friends, Paterson
- 25) Hackensack Grammar School Students - Tony Decondo, Coordinator
- 26) Paterson Community Development Corporation
- 27) Joe Goloumb, North Arlington
- 28) Hawthorne Cub Scouts, George Clark, Coordinator
- 29) Americorps
- 30) International Youth Organization
- 31) St. Paul's Community Development Corporation, Paterson - Rich Williams, Youth Services Director
- 32) Hispanic Focus of Newark
- 33) NJIT Community Environmental Awareness Group
- 34) NJ Community Water Watch, William Paterson University
- 35) Service for Peace, Paterson Chapter
- 36) Montclair High School Students
- 37) Third River Association
- 38) Friends of Clark's Pond, Bloomfield
- 39) Sandra Lieberman, Lynn Levin, Bayonne
- 40) Garrett Morgan Academy Charter School, Paterson
- 41) River Road Improvement Corp., Fairlawn
- 42) Glenfield Park, Montclair, Susan Jawkocovitz
- 43) Mills Homes Area Association, Bloomfield
- 44) Friends of the Great Falls, Paterson
- 45) NJDEP Clean Shores Program
- 46) Bayonne Councilman Anthony Chiappone
- 47) PSE&G, Rich Dwyer
- 48) Ironbound Community Corporation, Newark

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Sampling & Watershed Programs

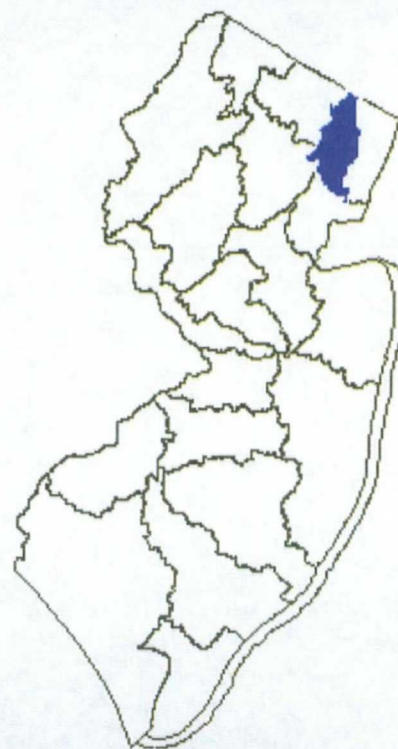
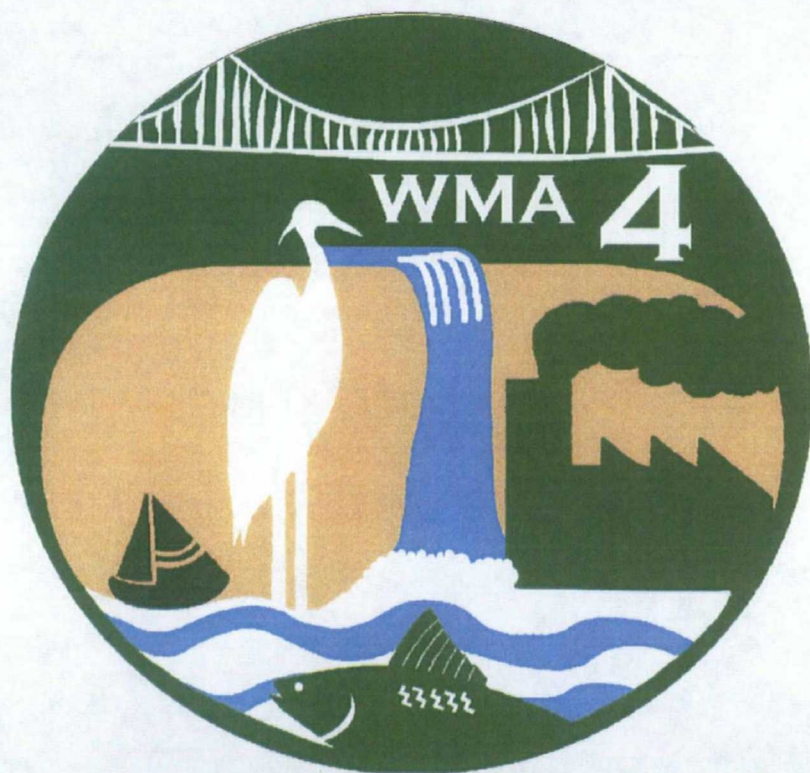
A thick, dark blue horizontal bar with rounded ends, positioned above the author's name.

Veronica Craw
Scientist

Watershed Management Area 4

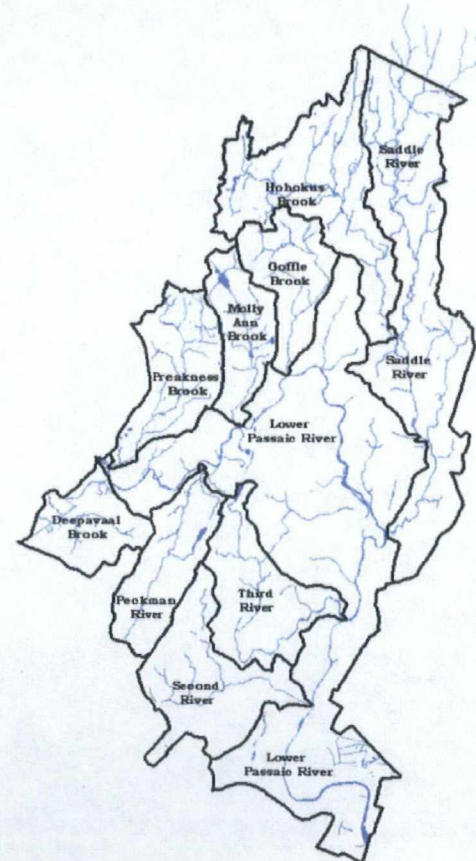
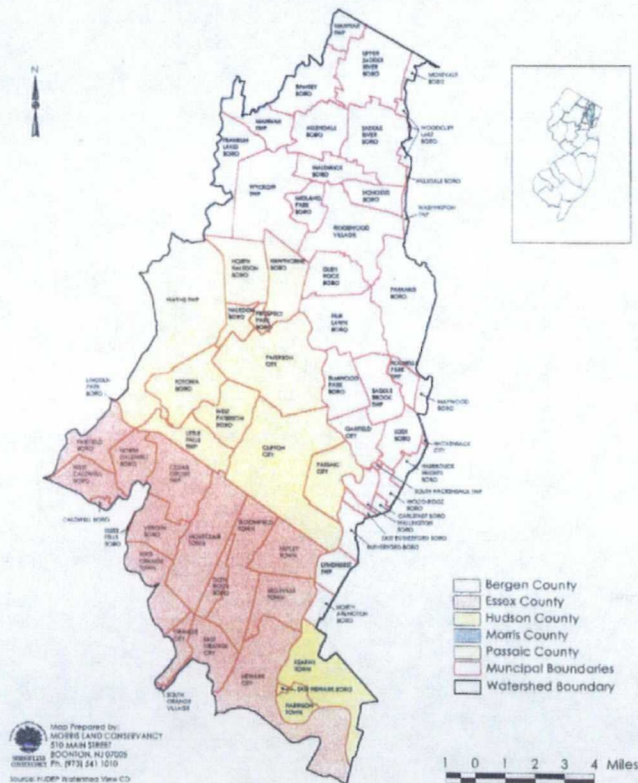
- **Public Process established by NJDEP**
- **Stakeholder in Areas 4, 5, 7**
- **WMA 4 (Lower Passaic and Saddle Rivers)**
 - **Chair of Public Advisory Committee**
 - **Chair of Education and Outreach Committee**
 - **Member**
 - **TAC**
 - **OSC**

Watershed Management Area 4



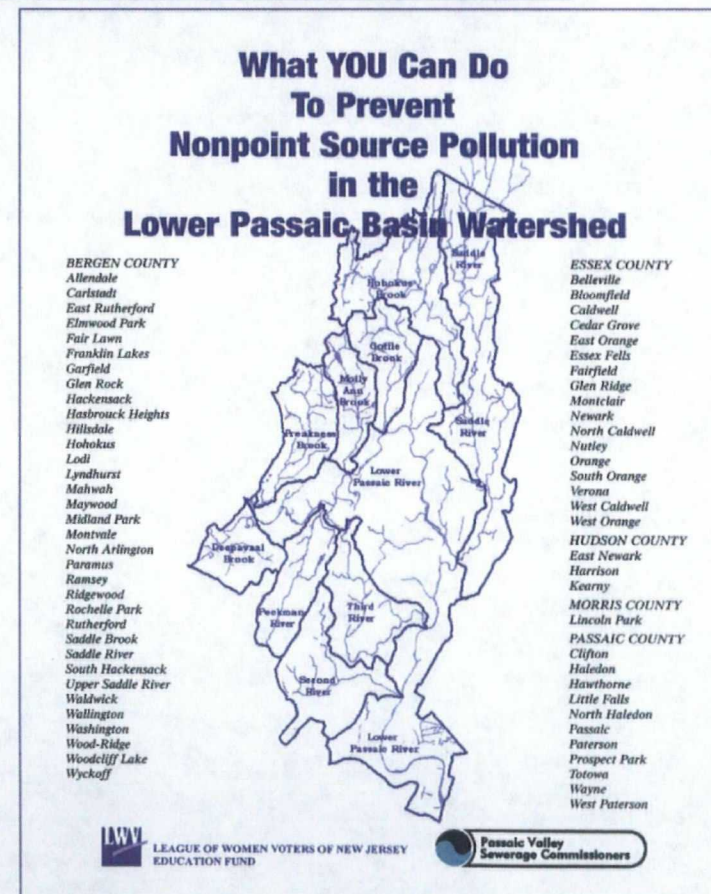
Watershed Management Area 4

Counties & Municipalities
in Watershed Management Area 4



Watershed Management Area 4

- Sponsored Publishing of NPS Brochure with LWV Ridgewood
- Distributed to all Local Municipal Officials and Public Libraries



Watershed Management Area 4

- Sponsored Passaic River Paddle/Clean-up
- Brought Public ONTO River





Watershed Management Area 4

- **Americorps Sponsored Program through NJDEP**
- **Outreach, Biological and Visual Assessments**
- **PVSC is host agency for WMA 4**
- **Provide resources and support**



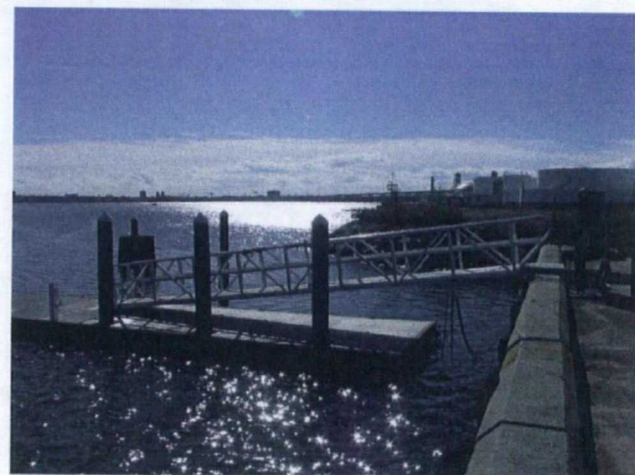
Passaic River Sampling Program

- **Initiated June 2000**
- **Completely Voluntary Effort**
 - no outside funding
 - not mandated in any permit
- **Goals**
 - Provide information on current water quality relative to SWQS
 - Document seasonal changes
 - Document improvements resulting from implementation of pollution control programs
 - Validate water quality model results

Passaic River Sampling Program

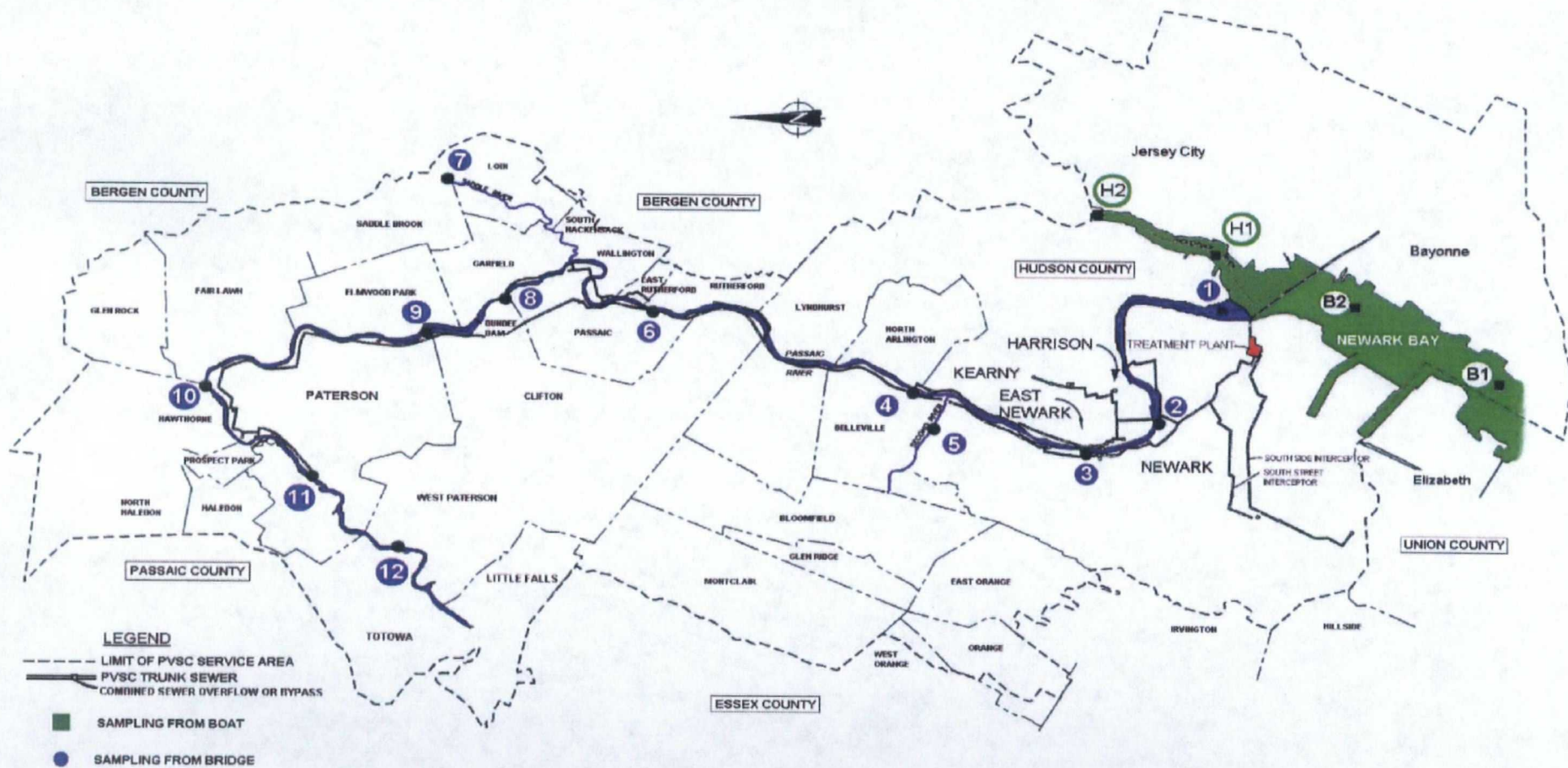
- **Passaic River, Newark Bay, Hackensack River**
- **Bi-weekly sampling**
- **17 Sites**
- **Data used by EPA and NJDEP for NJ Integrated List**
 - **303(d) List**

Passaic River Sampling Program



SAMPLING FLEET

Passaic River Sampling Program



Passaic River Sampling Program

- Dissolved Oxygen (DO)
- pH
- Total Suspended Solids (TSS)
- ✓•Fecal Coliform Bacteria – ✓
- Enterococcus Bacteria
- Secchi Depth
- Salinity
- Temperature
- Chlorophyll-a
- Dissolved Organic Carbon (DOC)
- Temperature
- Total Kjeldahl Nitrogen (TKN)
- Ammonia (NH₃)
- Nitrite + Nitrate (NO₂+NO₃)
- Total Phosphorus (TP)
- Orthophosphorus (OP)
- CBOD₅

Water Column Only

Passaic River Sampling Program

- In 2003 expanded geographic reach with NJHDG
 - To prevent inaccurate modeling estimates which could ultimately lead to inappropriate regulatory decisions
 - To collectively utilize our scarce resources to best meet water quality objectives

Passaic River Sampling Program

- **HEP ad hoc monitoring subcommittee**
 - **Formed at request of EPA**
 - **To ID data gaps, coordinate agency activities, produce one comprehensive Harbor wide report**
 - **IEC Chair**
 - **NYCDEP, NJHDG, NJDEP, NYSDEC**

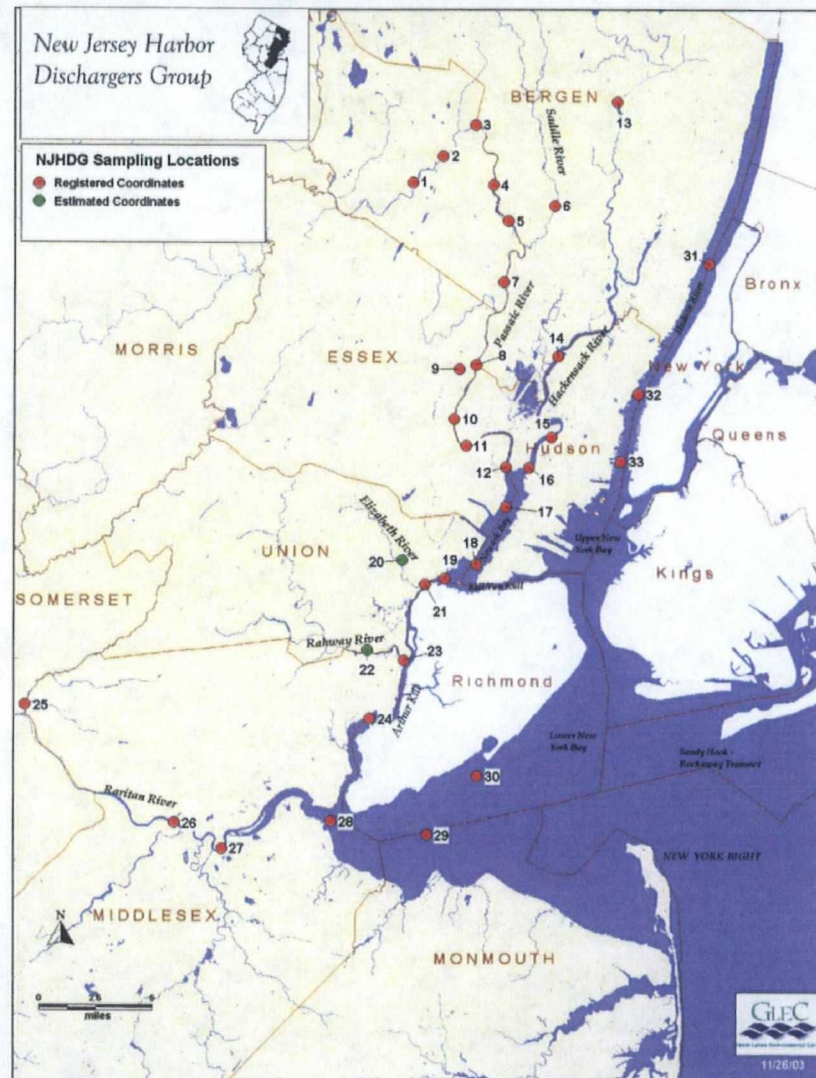
Passaic River Sampling Program

- **Parameters include nutrients, bacteria, DO, chlorophyll a**
 - Added Enterococcus and DOC
- **Increased sampling frequency**
 - Weekly in summer
 - Bi-weekly in winter

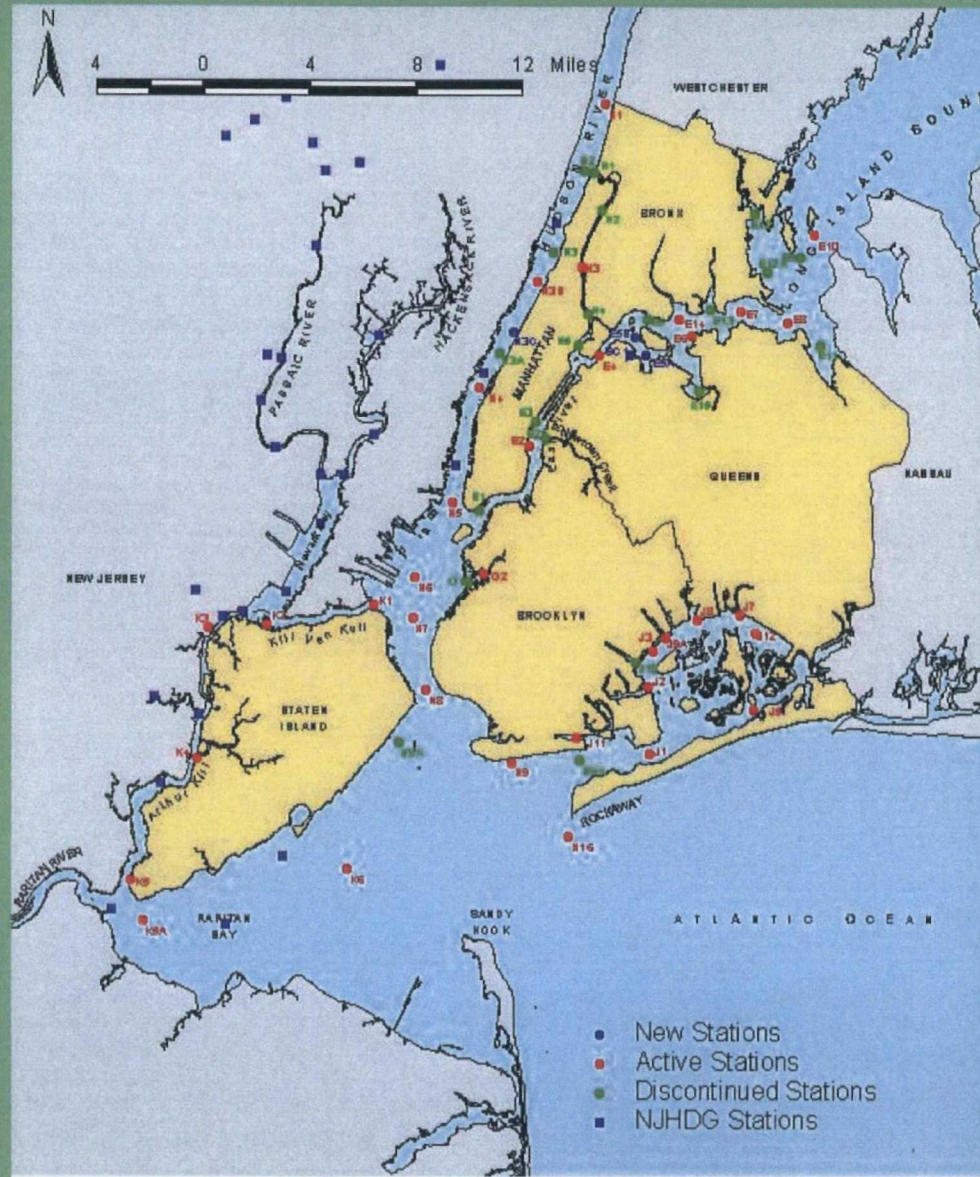
Passaic River Sampling Program

- **33 stations in NY Harbor, Passaic, Hackensack, Hudson and Raritan Rivers, Arthur Kill and Raritan Bay**
- **Tributaries and Head of Tide sampling**
- **All parameters measured at all sites**
- **Cooperation with EPA to monitor Raritan Bay**

Passaic River Sampling Program



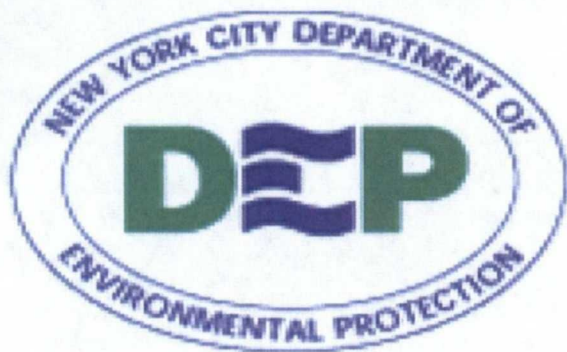
Passaic River Sampling Program



Vessels Involved in Harbor Wide Survey



Final Product – Harbor Wide Water Quality Monitoring Report



*New Jersey Harbor
Dischargers Group*





CSO System Description



John Rolak
Hatch Mott MacDonald

Evolution of the Combined Sewer System



What is a Combined Sewer System?

The same conduit is used for dry weather sanitary flow and wet weather storm flows.

Evolution of the Combined Sewer System

Period – Mid to Late 1800's

Conduits were constructed in large cities to transport both sewage and drainage to the river.

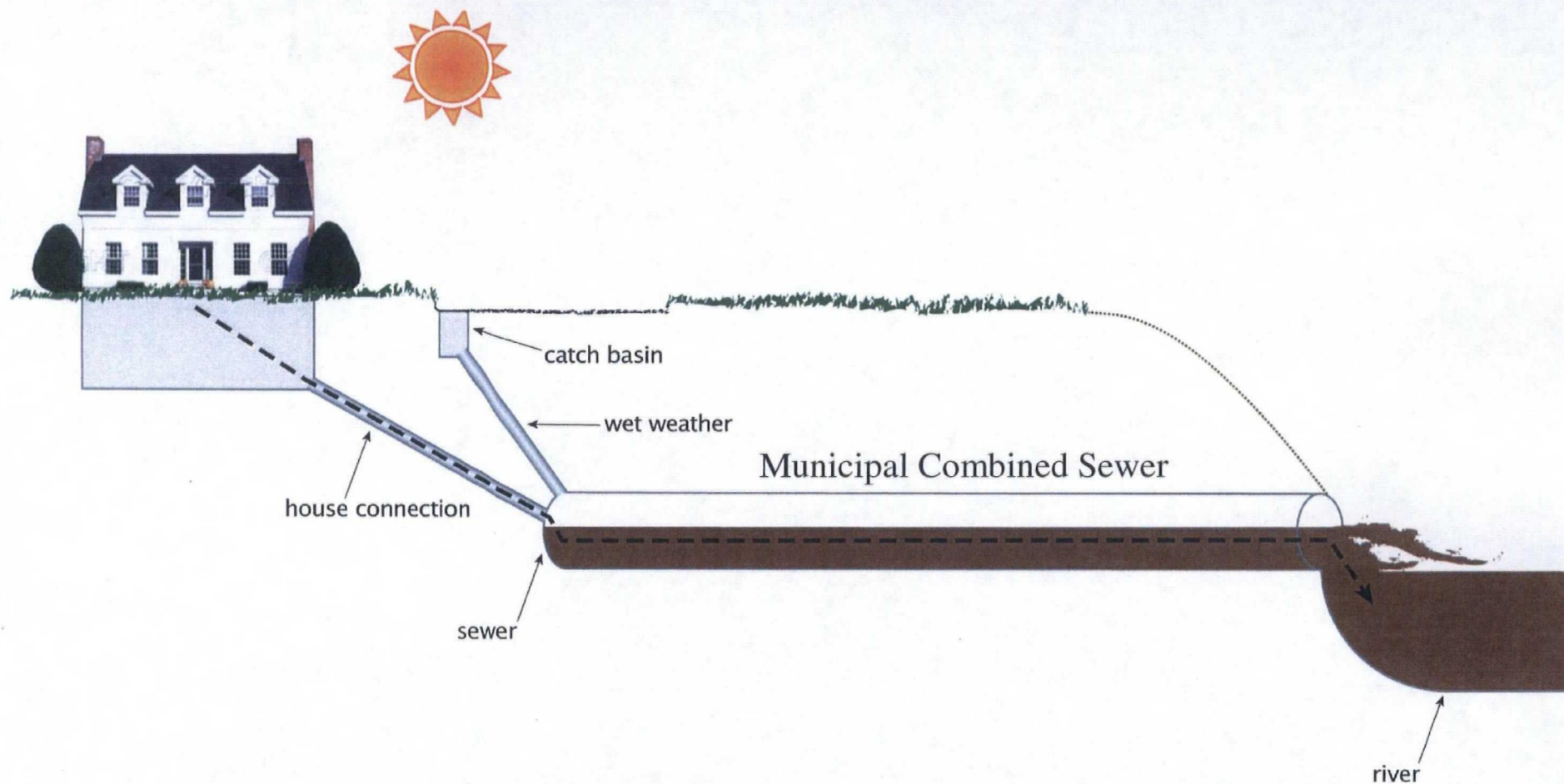
“Dilution is the solution”

Evolution of the Combined Sewer System

Period – Early 1900's

“Dilution was not the solution”

**August 1909 Nereid Boat Club In Rutherford
terminates future annual regattas in the Passaic
River due to health risks from pollution.**



The Passaic River and Newark Bay Become Open Sewers

Evolution of the Passaic Valley Sewerage Commissioners

1911 – First Municipalities to Contract for Treatment

Belleville	Garfield	Nutley
Clifton	Kearny ✓	Passaic
East Newark ✓	Lyndhurst	Paterson ✓
East Rutherford	Newark ✓	Rutherford
Harrison ✓	North Arlington	Wallington

Green denotes combined sewer systems

Evolution of the Passaic Valley Sewerage Commissioners

**PVSC Interceptor Sewers (more than
23 miles of pipe) and treatment facilities
were constructed between 1912 and 1924**

Regulation of Flow from Combined Sewer Systems

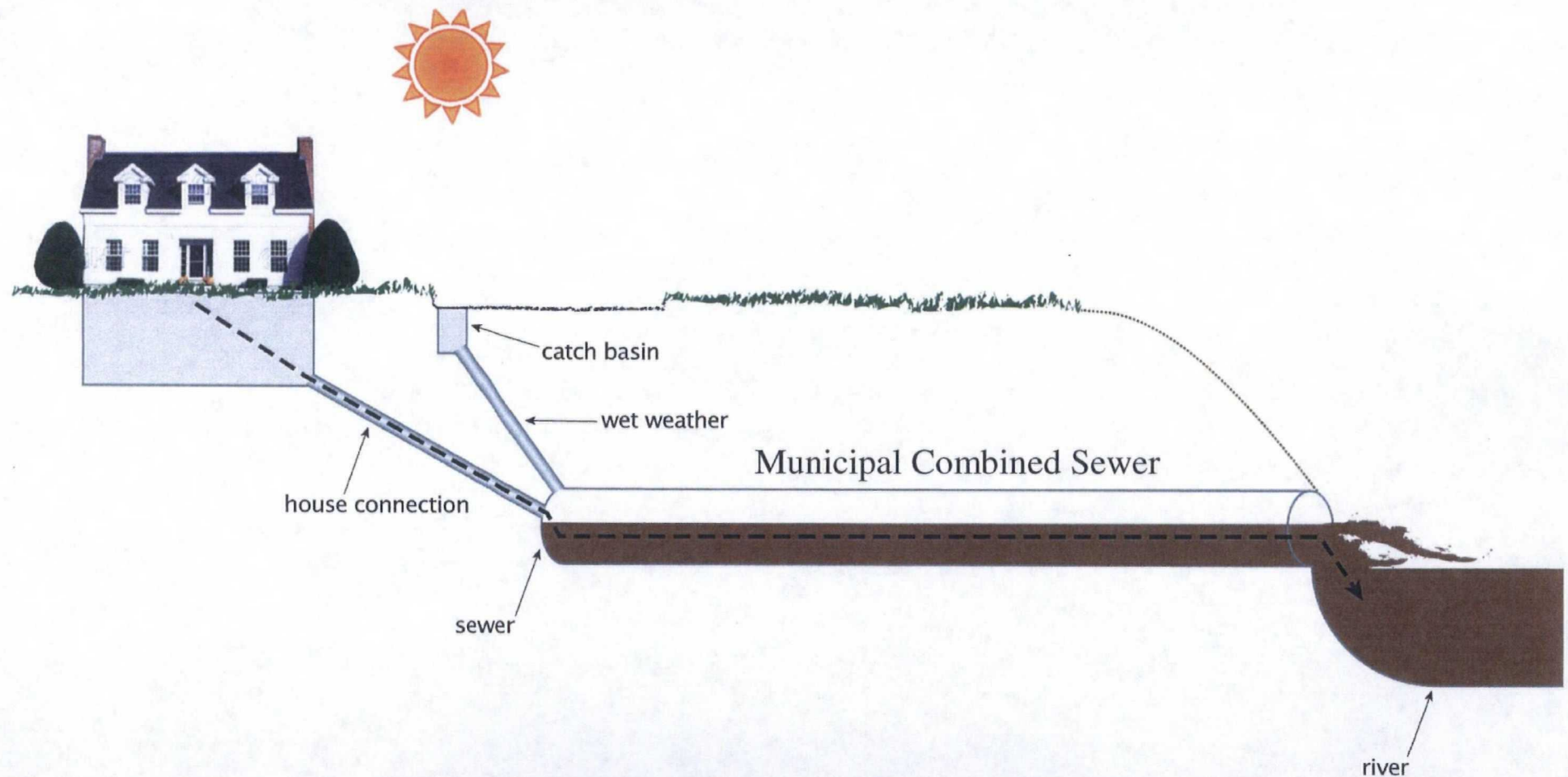


PVSC Regulator Facilities

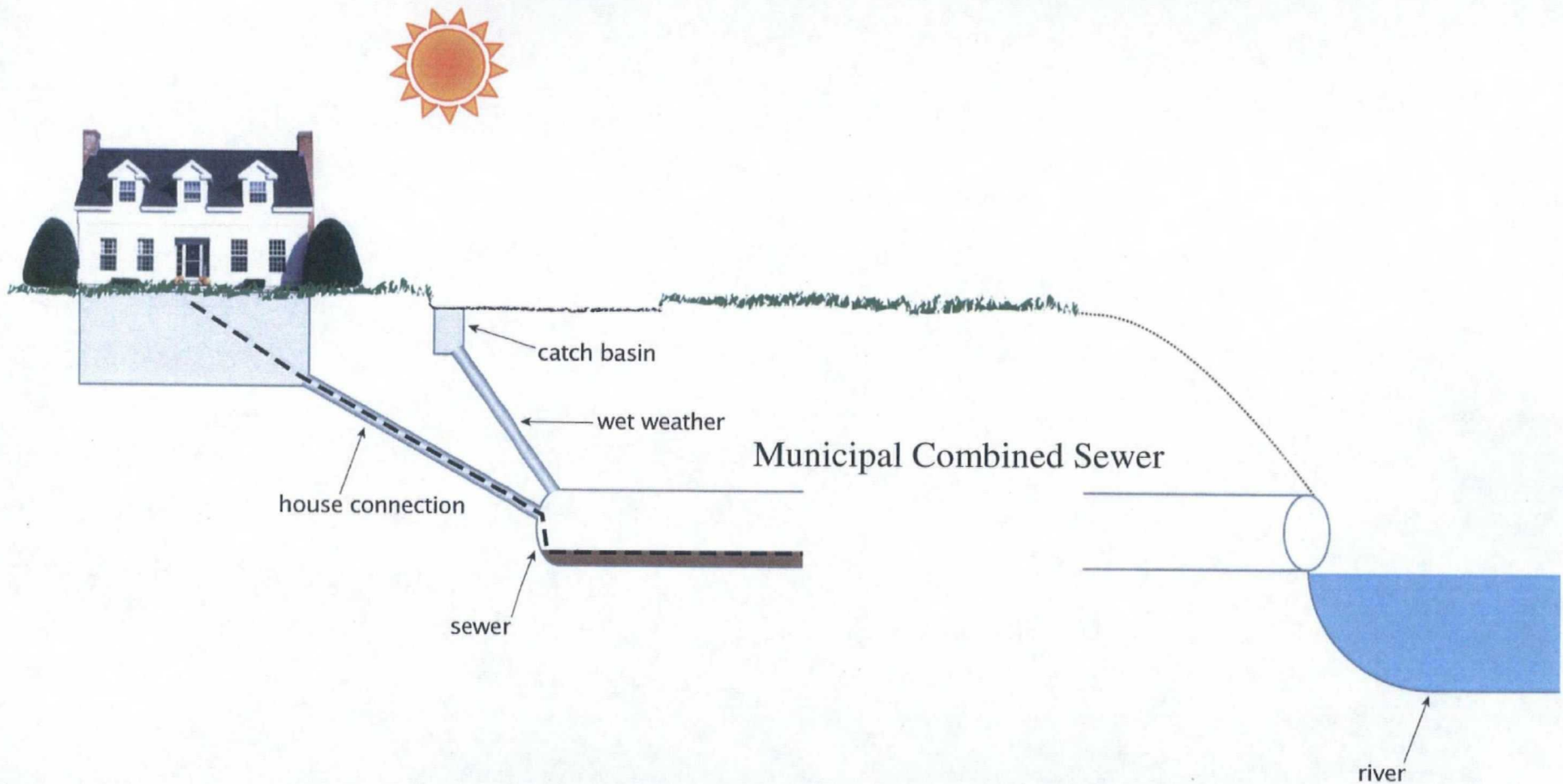
Constructed as Part of the Interceptor Sewer

**Regulate and Limit Wet Weather Flows to the
Capacity of the Interceptor Sewer and Sewage
Treatment Plant**

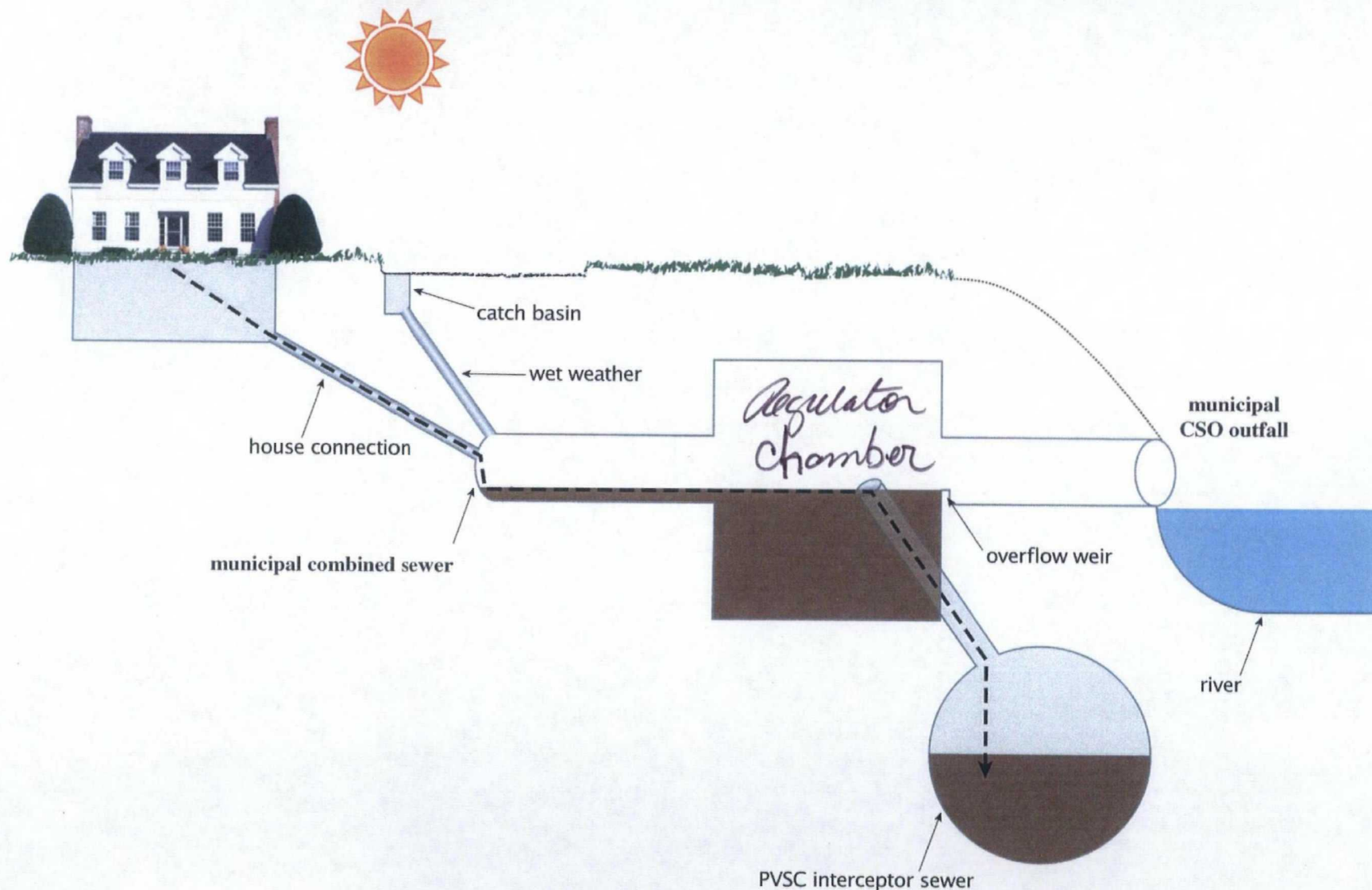
Regulation of Flow from Combined Sewer Systems



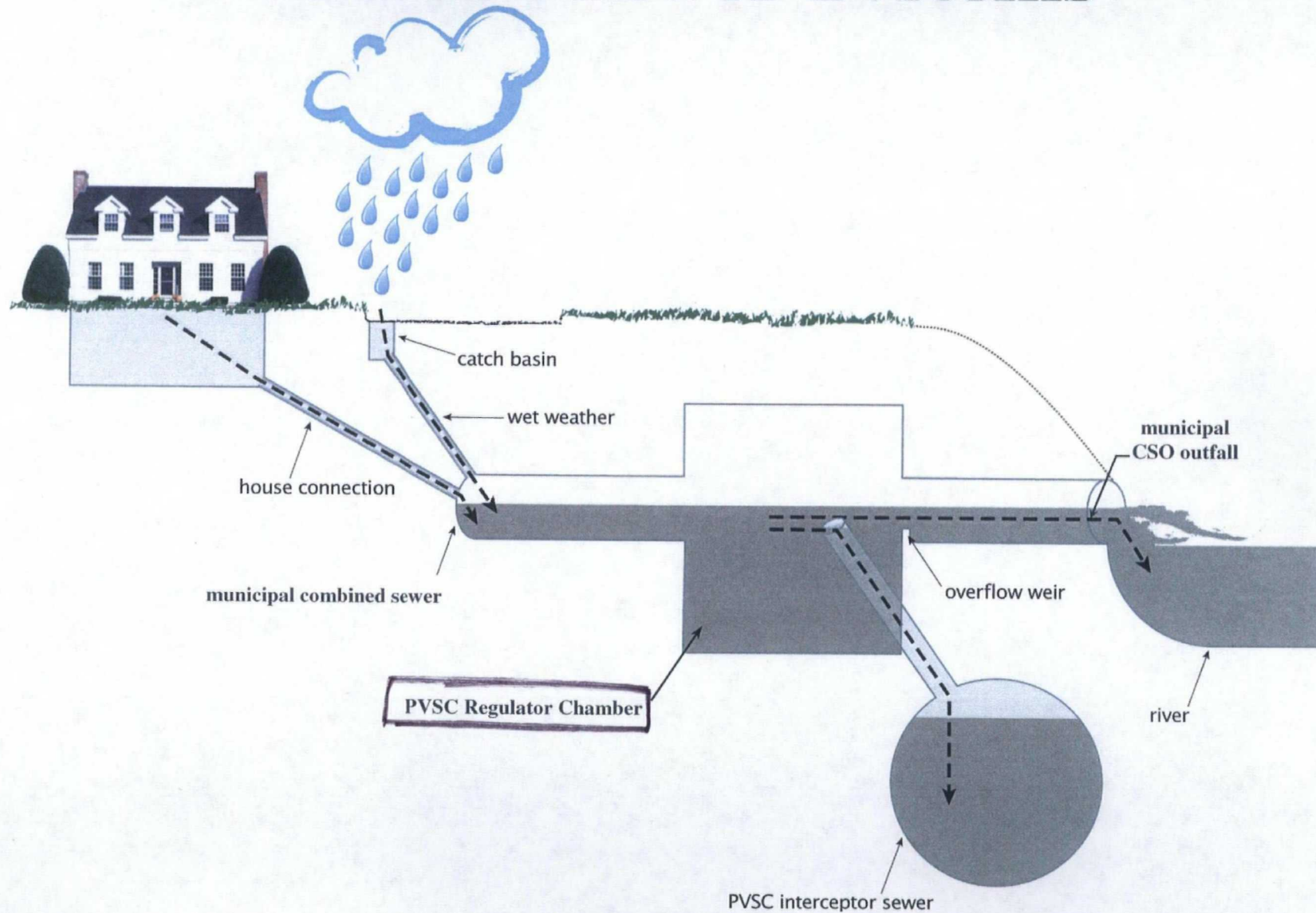
Regulation of Flow from Combined Sewer Systems



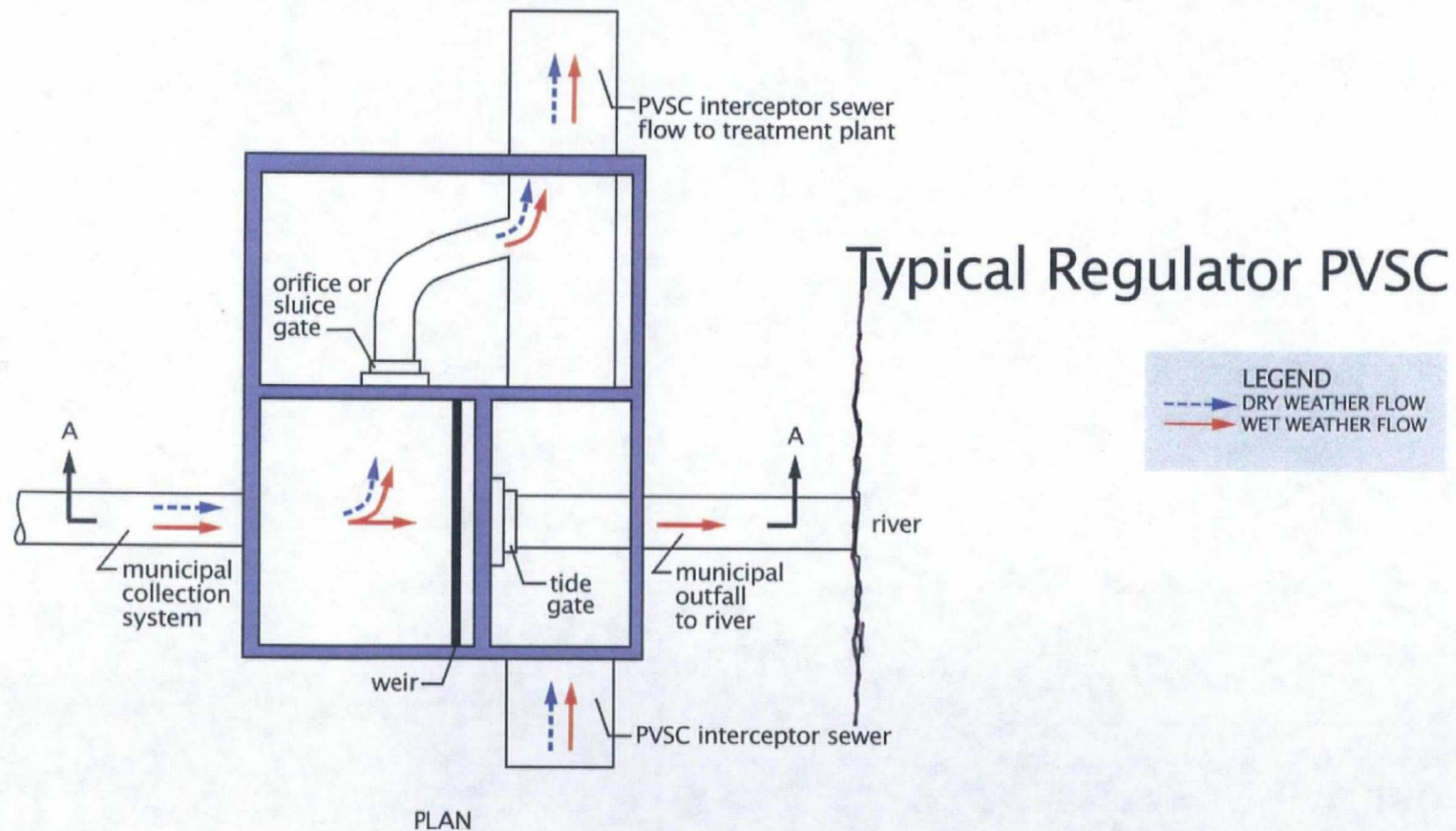
Regulation of Flow from Combined Sewer Systems



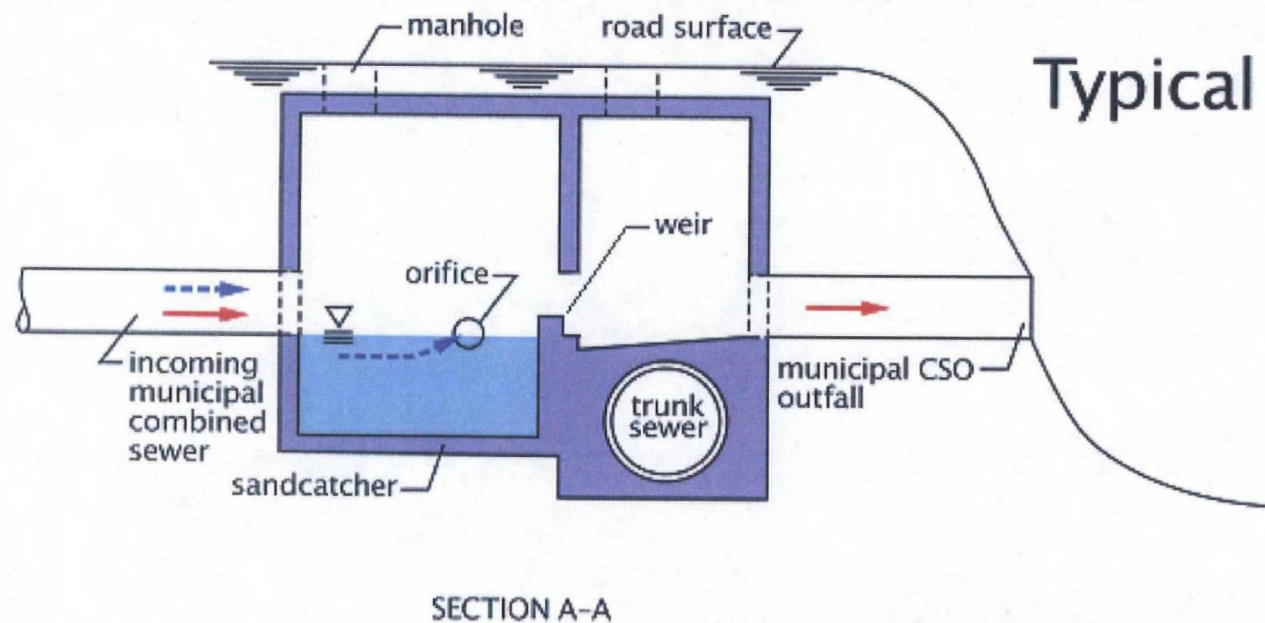
Regulation of Flow from Combined Sewer Systems



Regulation of Flow from Combined Sewer Systems



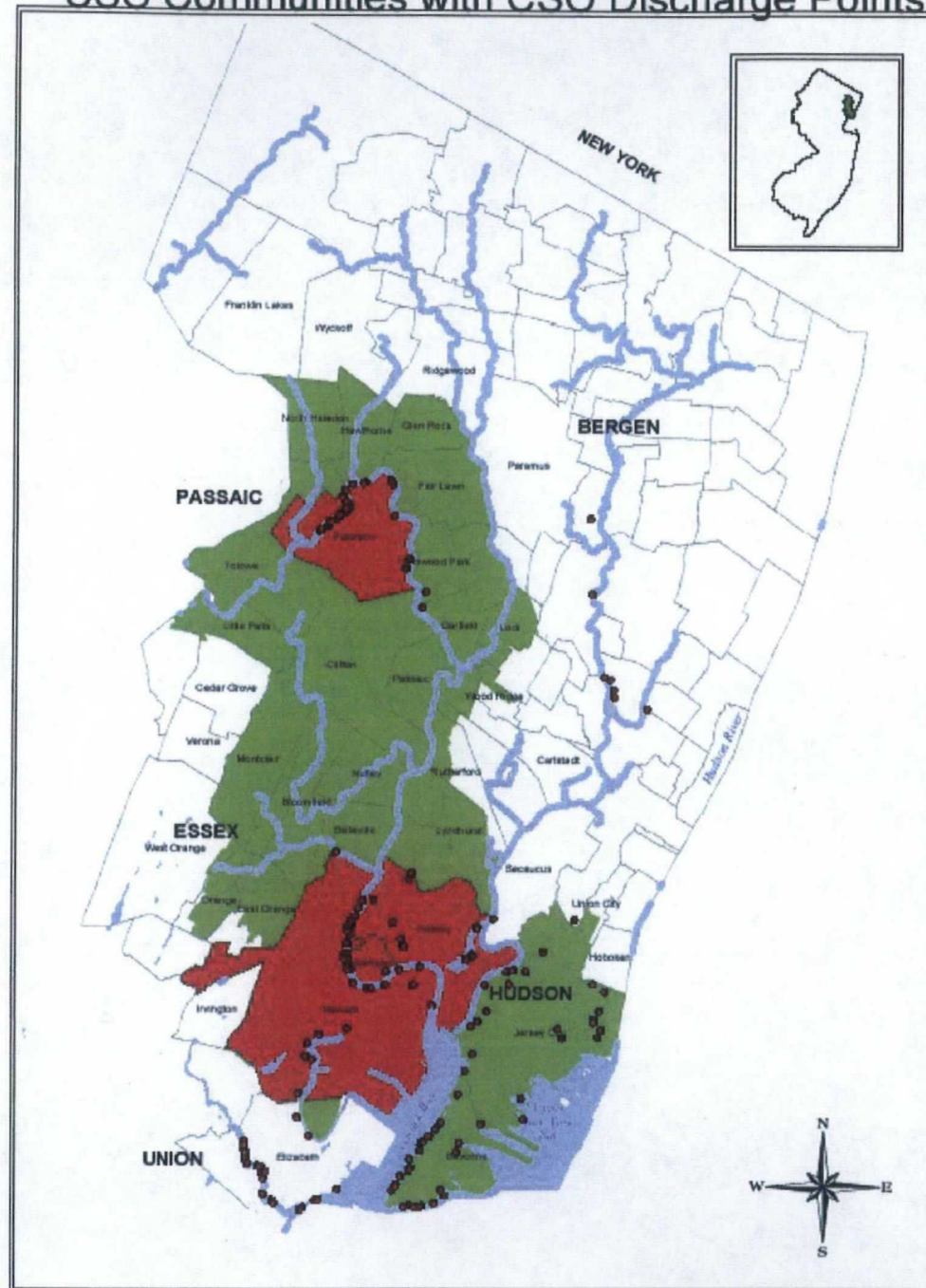
Regulation of Flow from Combined Sewer Systems

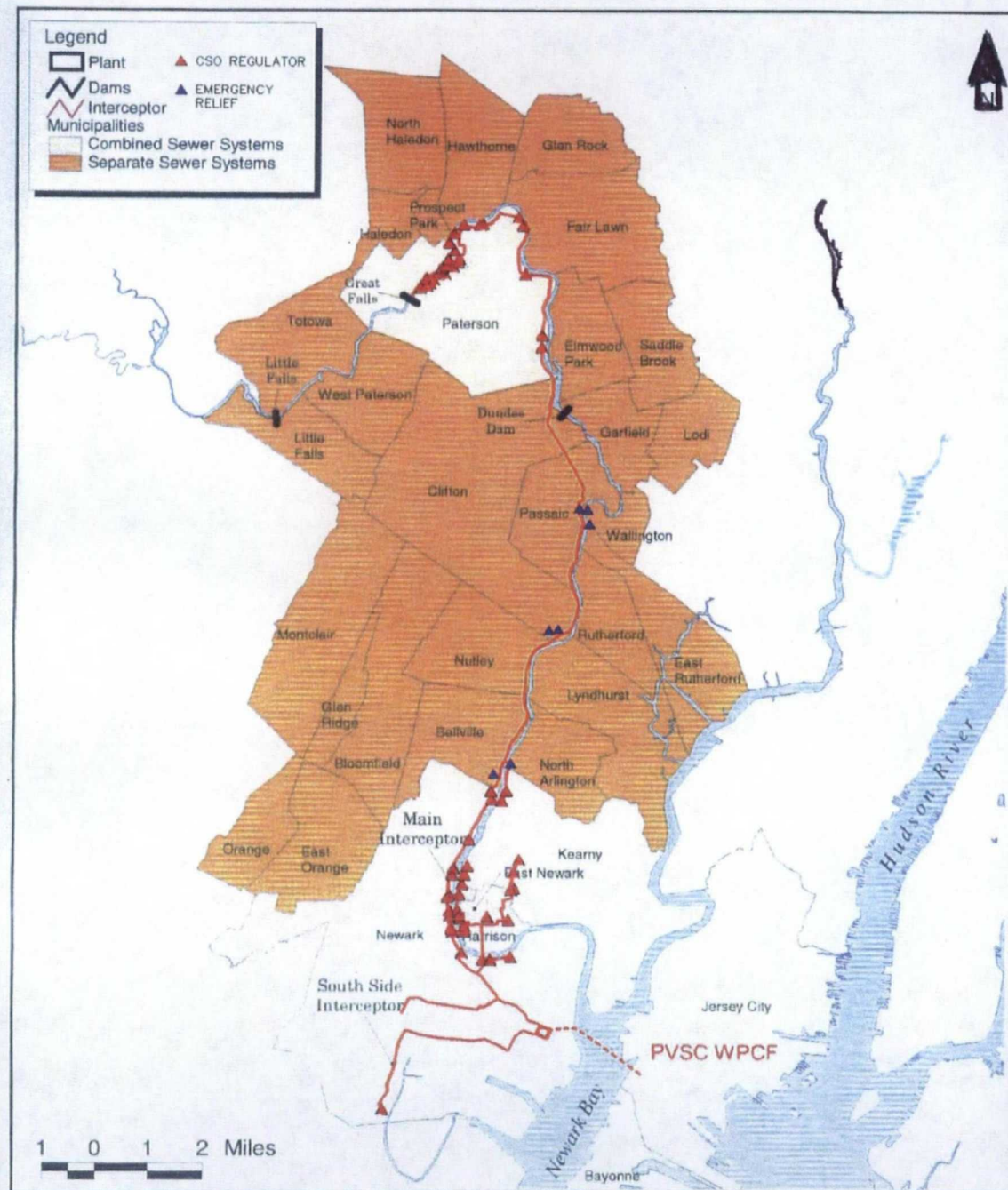


Typical Regulator PVSC

LEGEND
— DRY WEATHER FLOW
— WET WEATHER FLOW

CSO Communities with CSO Discharge Points





PVSC Flow Regulators

PVSC Regulators Associated with Main and Branch Interceptor Sewers

East Newark (Boro)	1 regulator
Harrison (Town)	7 regulators
Kearny (Town)	10 regulators
Newark (City)	14 regulators
Paterson (City)	28 regulators

Types of CSO Regulators

- **Orifice Control (majority)**
- **Manual Sluice Gates**
- **Remotely Operated Sluice Gates**

Types of CSO Regulators

Manual Sluice Gates

- **Manual Sluice Gates**
 - **Verona Avenue, Newark**
 - **City Dock Street, Newark**
 - **Freeman Street, Newark**

Types of CSO Regulators

Remotely Operated Sluice Gates

- **Remotely Operated Sluice Gates (activated at WPCF to prevent wet weather flows above plant capacity)**
 - Market Street, Paterson
 - Herbert Street, Newark
 - Fourth Street, Newark
 - Clay Street, Newark
 - Rector Street, Newark
 - Saybrook Street, Newark
 - Jackson Street, Newark
 - Polk Street, Newark

Regulation of Flow within the PVSC Interceptor System

- **Regulator Facilities**
- **Emergency Relief Points**

Flow Regulation within the PVSC Interceptor System



- **What is a Emergency Relief Point?**
 - Most likely constructed at time of Interceptor
 - A manual gate and pipe, only operated under extreme emergency conditions to provide hydraulic relief to the Interceptor or Pumping Station, put into operation to protect the health and safety of the general public

Flow Regulation within the PVSC Interceptor System

- **Emergency Relief Points**

- Yantacaw Pump Station
- Yantacaw Street
- Wallington Pump Station
- No. Arlington Branch
- Lodi Force Main
- Passaic Tail Race
- 2nd River Joint Meeting



Flow Regulation within the PVSC Interceptor System


- **Emergency Relief Points**
 - **Controlled Under N.J.A.C. 7-14A-3.10**
 - **Notification of NJDEP Hotline**
 - **Unavoidable to prevent loss of life, personnel injury, or severe property damage.**
 - **No feasible alternatives**
 - **Public Notification**



Questions?



PVSC's Pretreatment Program



Andy Caltagirone
Industrial & Pollution Control Manager

What led to our Industrial Pretreatment Program's Establishment?

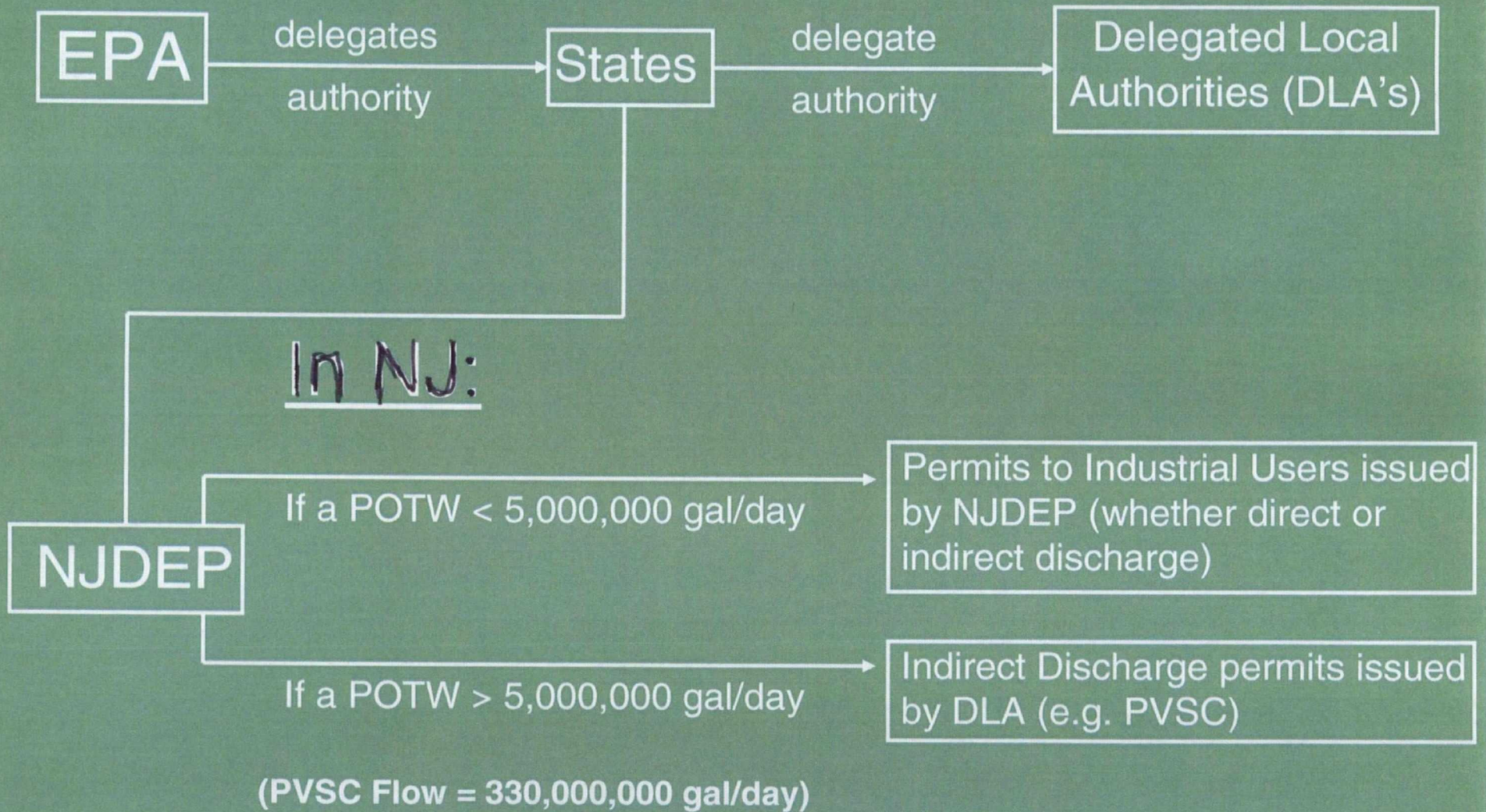
Federal Regulations Prior to 1972:

- **1899 – The Rivers and Harbors Act**
- **1912 – The Public Health Service Act**
- **1965 – The Oil Pollution Control Act**
- **1966 – The Clean Water Restoration Act, and**
- **1970 – The Water Quality Improvement Act**

1972 Federal Water Pollution Control Act (Act of Congress)

- **Unlawful to pollute nation's waterways**
- **Created a system of uniform controls on discharge of all pollutants**
- **Required a federal agency, the EPA, to establish effluent limitations and standards**
- **Goals were to have the nation's waters clean enough for swimming by 1983 and to eliminate the discharge of pollutants by 1985**
- **Amended in 1977 and now referred to as the Clean Water Act**

CWA Allows:



40 CFR 403

- a.k.a General Pretreatment Regulations (federal)
- provides the requirements by which the CWA will be implemented
- establishes objectives to prevent pollutants from interfering with the treatment works, and to prevent pollutants from passing through the plant and into the receiving waters
- specifically prohibits pollutants that
 - will create fire/explosive hazards in the sewer
 - will cause corrosion in the sewer
 - will cause obstruction in the sewer
 - will deplete oxygen at the treatment plant
 - prohibits heat that could inhibit biological activity in the plant
 - prohibits petroleum oils
 - prohibits pollutants which may create toxic gases
 - prohibits trucked pollutants except at discharge points designated by the POTW
- requires POTW's to develop a pretreatment program (includes permit issuance and inspection)
- requires POTW's Industrial users to self-report and submit these to POTW's
- requires POTW's to obtain the proper legal authority to carry out inspection, monitoring, and surveillance procedures, and to enforce the legal authority

60 Categories

401	General Provisions for Effluent Guidelines	434	Coal Mining Point Source Category
403	General Pretreatment Regulations	435	Offshore Oil & Gas Extraction Point Source Cat.
405	Dairy Products Processing Point Source Category	436	Mineral Mining & Processing Point Source Category
406	Grain Mills Point Source Category	437	Centralized Waste Treatment Point Source Category
407	Canned & Preserved Fruits & Vegetables Category	438	Metal Products & Machinery Point Source Category
408	Canned & Preserved Seafood Processing Category	439	Pharmaceutical Manufacturing Pt. Source Category
409	Sugar Processing Point Source Category	440	Ore Mining & Dressing Point Source Category
410	Textile Mills Point Source Category	441	Industrial Laundries Point Source Category
411	Cement Manufacturing Point Source Category	442	Transportation Equipment Cleaning Point Source Cat
412	Feedlots Point Source Category	443	Paving & Roofing Materials Point Source Category
413	Electroplating Point Source Category	444	Waste Combustors Point Source Category
414	OCPSF Manufacturing Category	445	Landfills Point Source Category
415	Inorganic Chemicals Manufacturing Category	446	Paint Formulating Point Source Category
417	Soap & Detergent Manufacturing Point Source Cat.	447	Ink Formulating Point Source Category
418	Fertilizer Manufacturing Point Source Category	451	Concentrated Aquatic Animal Production Pt. Source
419	Petroleum & Petroleum Refining Point Source Cat.	454	Gum & Wood Chemicals Manufacturing Pt. Source Cat
420	Iron & Steel Manufacturing Point Source Category	455	Pesticide Chemicals Manufacturing Pt. Source Cat.
421	Nonferrous Metals Manufacturingl Category	457	Explosives Manufacturing Point Source Category
422	Phosphate Manufacturing Point Source Category	458	Carbon Black Manufacturing Point Source Category
423	Steam Electric Power Generating Category	459	Photographic Processing Point Source Category
424	Ferroalloy Manufacturing Point Souce Category	460	Hospital Point Sourcel Category
425	Leather Tanning & Finishing Point Sourcel Category	461	Battery Manufacturing Point Source Category
426	Glass Manufacturing Point Source Category	463	Plastics Molding & Forming Point Source Category
427	Asbestos Manufacturing Point Source Category	464	Metal Molding & Casting Point Source Category
428	Rubber Manufacturing Point Source Category	465	Coil Coating Point Source Category
429	Timber Products Processing Point Source Category	466	Porcelain Enameling Point Source Category
430	Pulp, Paper, & Paperboard Point Source Category	467	Aluminum Forming Point Source Category
431	Builders' Paper & Board Mills Pt. Source Category	468	Copper Forming Point Source Category
432	Meat Products Point Source Category	469	Electrical & Electrical Components Pt. Source Cat.
433	Metal Finishing Point Source Category	471	Nonferrous Metals Forming & Metal Powders Category

NJAC 58:14

58:14-2

- **The board of commissioners known as the Passaic Valley Sewerage Commissioners, the first members of which were appointed and approved in 1902, is continued as a body politic and corporate with the power and authority necessary to carry out and effectuate the purposes for which the body is created.**

PUSC - legal authorities

NJAC 58:14

58:14-7

- **No sewage or other polluting matter shall be discharged, directly or indirectly, into the waters of the Passaic River.**
- **The commissioners may enforce throughout all municipalities.**
- **The commissioners may institute civil actions as may be deemed necessary.**

NJAC 58:14

58:14-8

- **No sewage or waste matter shall be placed or discharged into the waters of the Passaic River.**

NJAC 58:14

58:14-35

- ⦿ **The Commissioners shall have the power to adopt rules and regulations. Such rules may include pretreatment requirements, requirements for the adoption of sewer use ordinances and of user charge...**
- ⦿ **Any person who violates any provision of any rule or regulation adopted by the Commissioners pursuant to this section shall be subject to a civil penalty of up to \$50,000.00 per day for each violation...**
- ⦿ **The commissioners may institute a civil action in the Superior Court for injunctive relief to prevent or restrain any act or activity which threatens to adversely affect public health or safety or the operation of the system.**

PVSC's Rules and Regulations

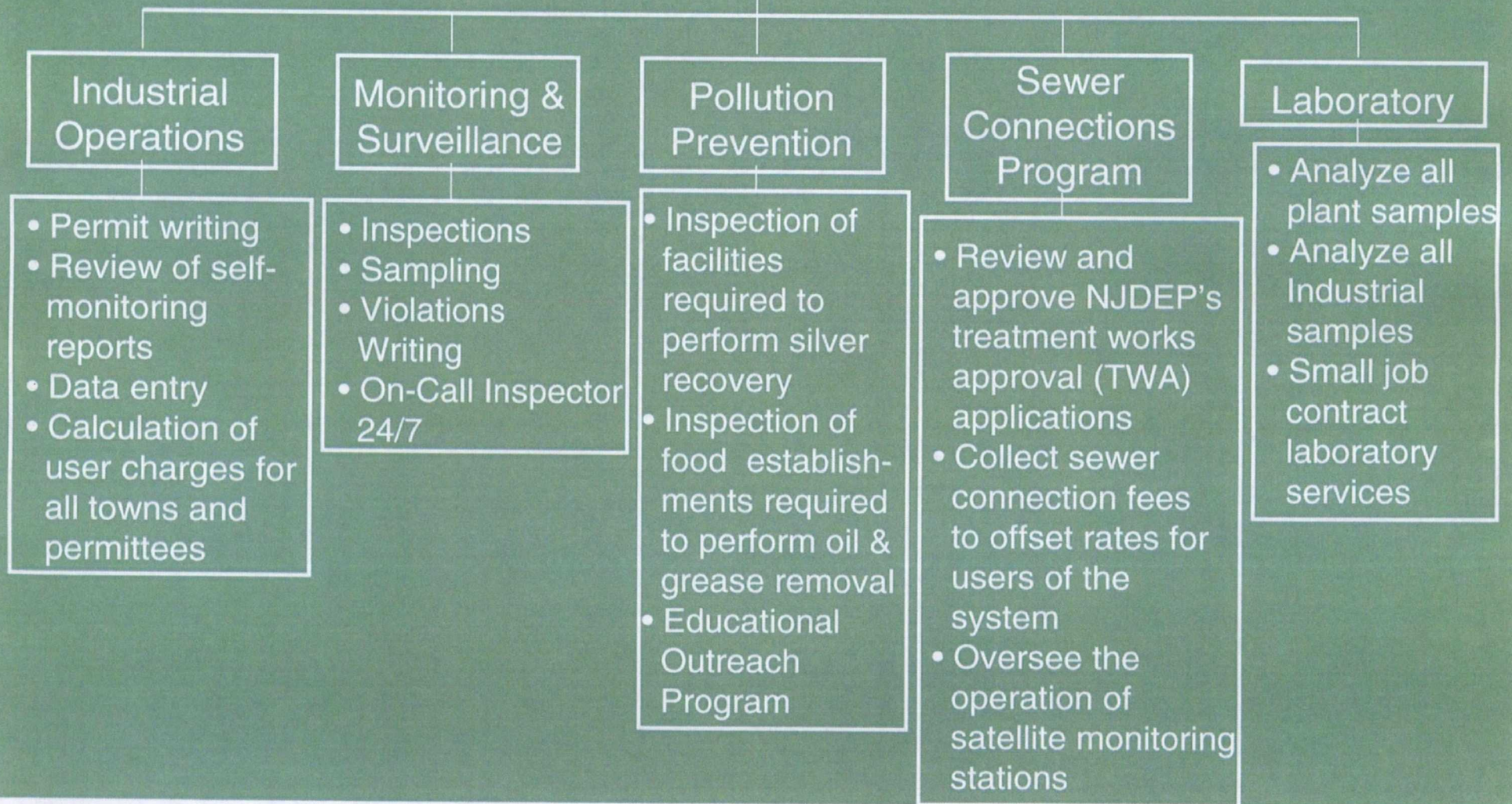
- **Effective 8/12/82**
- **Also sets uniform requirements**
- **Covered are General Provisions, Sewer Construction and Use, Permits, Pretreatment Regulations, Pollution Prevention, User Charge, and Administration (Authority)**
- **Adopted pursuant to NJSA 58:14**

LOCAL SEWER USE ORDINANCES

- **These are ordinances that provide POTW's with the legal authority and ability to enforce their Rules in the respective towns. These SUO's stay current as PVSC's Rules & Regulations change, as they incorporate the Rules changes by reference**

Industrial and Pollution Control

Who are we and what do we do?



*United States
Environmental Protection Agency*

*National First Place
Clean Water Act Recognition Award
for Pretreatment Program Excellence
Greater than 100 Significant Industrial Users*

Presented to

**PASSAIC VALLEY SEWERAGE COMMISSIONERS
INDUSTRIAL & POLLUTION CONTROL DEPARTMENT
NEWARK, NEW JERSEY**



OCTOBER 13, 2003

Ma L. Weil

Acting Administrator



UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY

2003 NATIONAL FIRST PLACE
CLEAN WATER ACT RECOGNITION AWARD

FOR PRETREATMENT PROGRAM EXCELLENCE
GREATER THAN 100 SIUs

Presented To

PASSAIC VALLEY SEWERAGE COMMISSIONERS
INDUSTRIAL AND POLLUTION CONTROL DEPARTMENT
NEWARK, NEW JERSEY

MARIANNE L. HORINKO
ACTING ADMINISTRATOR

What type of non-domestic users does PVSC have?

Category	# of Users	Total Flow MGD	Substantial
413	38	0.344	
414 <i>big chem</i>	26	2.085	yes
415	1	0.003	
420	1	0.023	
421 ¹	1	0	
423	2	0.205	
425	1	0.243	
430 <i>Paper Pulp</i>	3	4.712	yes
433 ²	19	0.102	
437	2	0.24	
439 <i>Pharm</i>	8	1.107	yes
442	6	0.071	
455	1	0.051	
461	1	0.001	
464	2	0.026	
467	1	0.001	
469	1	0.006	

Significant Non-Categorical Users. Substantial Flows:

17 Textile mills (410 no longer considered categorical) – 3.882 MGD

18 Hospitals – 3.717 MGD

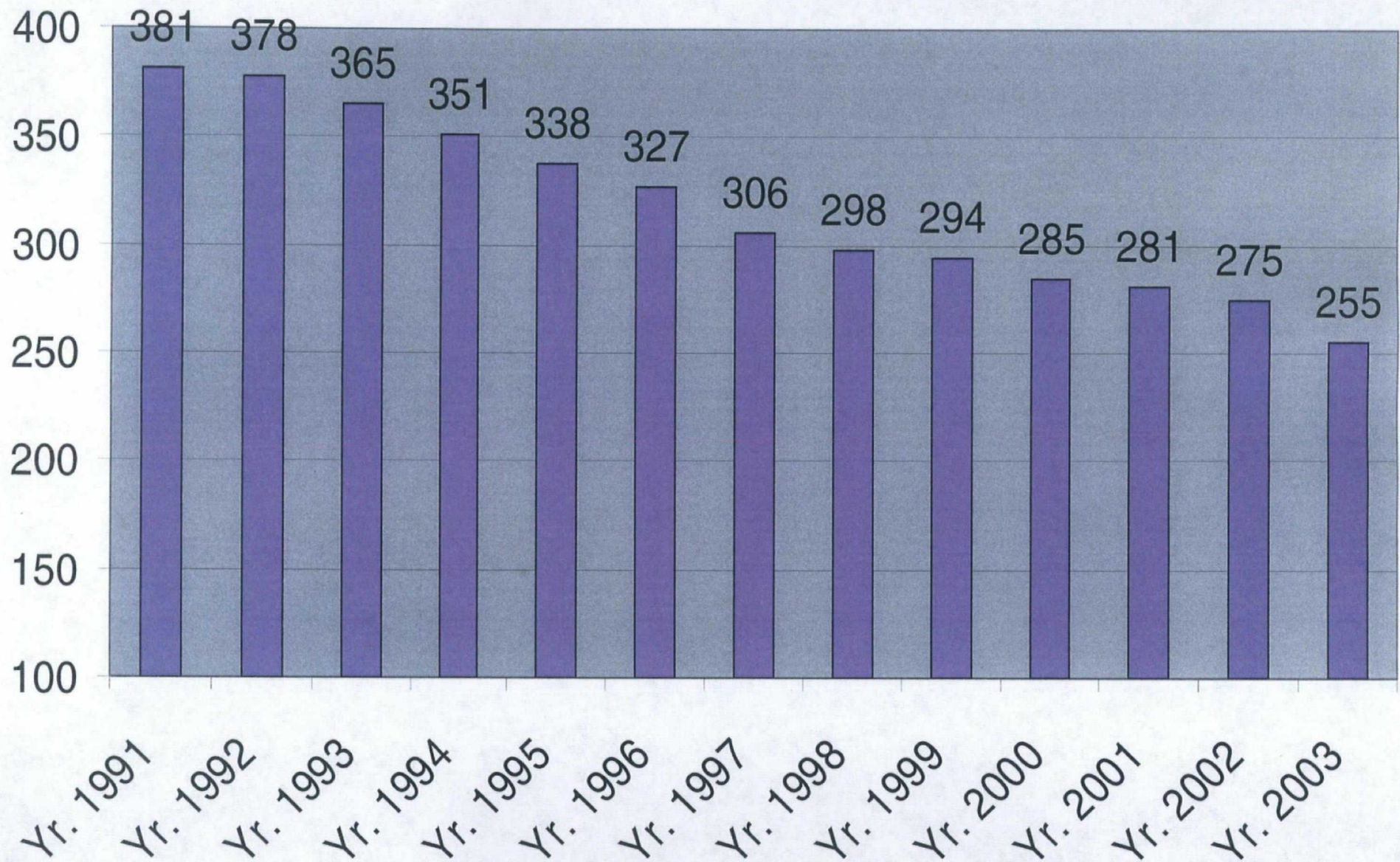
1 Brewery – 3.755 MGD

Other common types include corrugated box manufacturers, food processing plants, pigment dispersion manufacturers, fur pelt processors, cosmetic manufacturers, and leachate dischargers.

¹ The one industrial user is a zero regulated discharger.

² One of the industrial users is a zero regulated discharger.

Number of Permittees Have Decreased Over the Last Decade



SIGNIFICANT INDUSTRIAL USER (SIU) or PERMITEE

- 1. is subject to categorical pretreatment standards;**
- 2. discharges an average of 25,000 gallons or more per day of any waste regulated by the PVSC;**
- 3. discharges more than the equivalent of 25,000 gallons per day of domestic sanitary waste;**
- 4. has discharged waste which violated any federal, state, or local pretreatment standard or limitation;**
- 5. is designated as such by the PVSC because the user has a reasonable potential to discharge wastes which would adversely affect the PVSC operation or violate a pretreatment standard or limitation;**
- 6. meets the definition set forth in 40 C.F.R. 403.3 (t); or**
- 7. as determined by the Chief Executive Officer requires a Sewer Use Permit due to the nature of the wastes in its discharge to the sanitary sewer.**

What's in a Permit?

1. **Duration and non-transferability**
2. **Effluent limits (federal, local, or Best Professional Judgment)**
3. **Requirements for self-monitoring, sampling, reporting, etc.**
4. **Applicable statements of civil and criminal penalties, fines, etc.**
5. **Operations and Maintenance of control systems**
6. **Notification of violations to PVSC, of hazardous waste discharges, of potential slug loadings, changes to the discharge**

Self Monitoring

- **Required by 40 CFR 403**
- **Pretreatment report (MR-1)**
 - **metals**
 - **hydrocarbons**
 - **organics**
- **User charge report (MR-2)**
 - **BOD**
 - **TSS**
 - **Volume Discharge**
- **Required monthly, and must certify as to accuracy under penalty of law.**
- **Permittee required to install accessible and representative sampling point.**
- **Required to utilize a NJDEP-certified laboratory.**

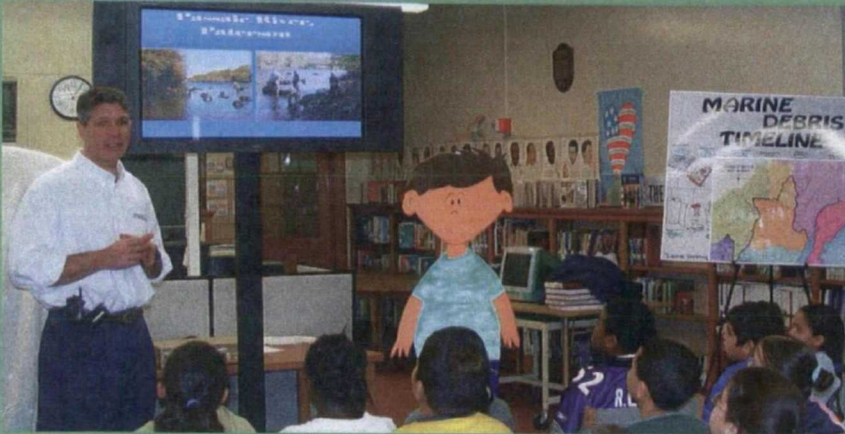
Inspection / Monitoring

- All sites fully inspected at least once/year (types include entire facility, pH reviews, compliance milestone checks, witnessing of flow meter calibrations, etc.)
- All sites fully sampled at least once/year.
- All visits unannounced with exception of the full site inspection.
- Overwhelming majority are inspected and sampled several times/year.
- 8/02 – 7/03
 - ~3,000 documented inspections of permittees and non-permittees.
 - ~6,700 documented sampling visits performed of permittees and non-permittees.
- 24/7 On-Call Inspector
- 2000 – 2003 – Around-the-clock surveillance of one permittee
- 12/03 – Participated in a multi-agency sweep of Paterson (EPA, DEP, PVSC and local officials) – numerous violations found, offered assistance to facilities towards helping them comply with air, water, and solid waste regulations.

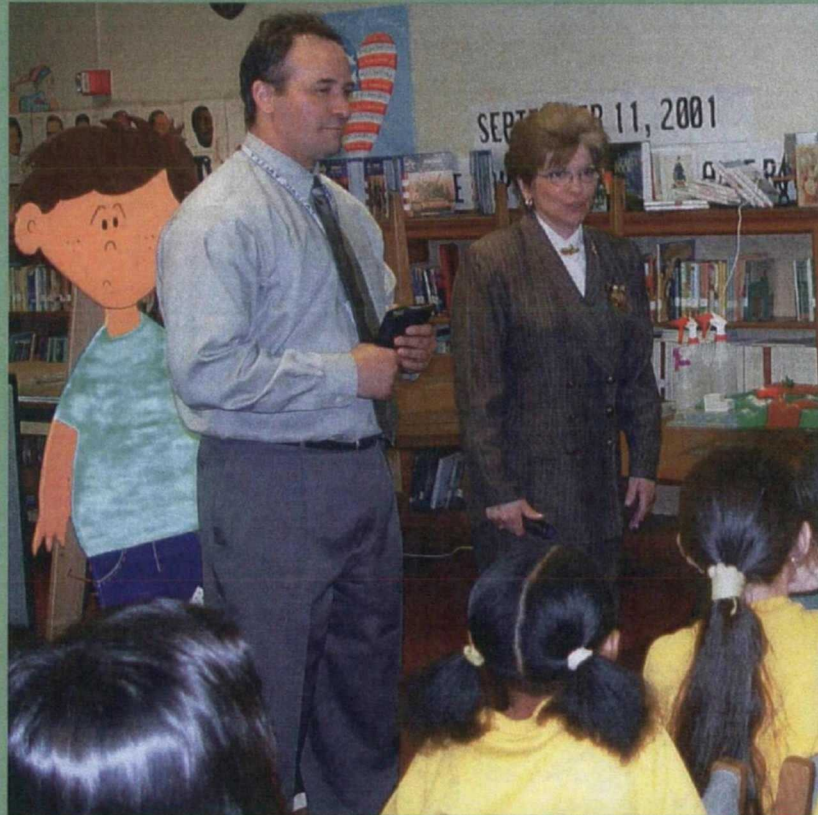
PVSC Inspectors Installing Automatic Sampling Equipment



Public Education



Bob DeVita describes PVSC's ongoing effort to clean up the Passaic River basin to Paterson School #18 4th graders.



Anthony Russo takes questions from Paterson School #18 4th graders as Principal Rankin looks on.

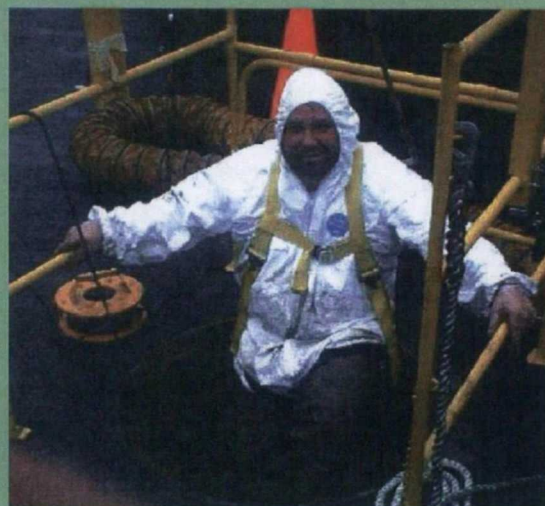


PVSC's Chris Brooks is all smiles as he accepts Wave Award for his "Messy Marvin" school outreach program presentation.

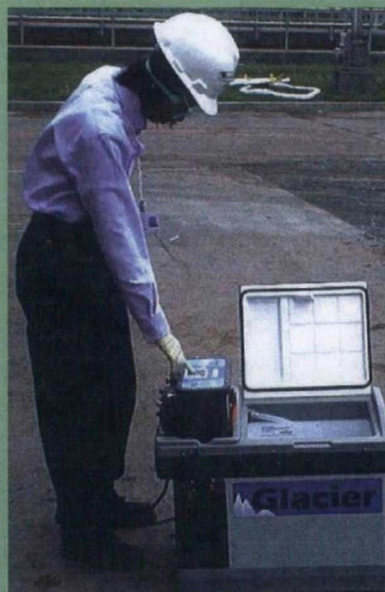
Arthur Peluso calibrates one of PVSC's two portable flame-type LEL meters during a study of an OCPSF facility.



Louis Lambe exits a manhole after installing a portable Area Velocity meter in a 30" sewer to monitor an IU.



PVSC's Executive Director, Bryan Christiansen, welcoming invited guests and keynote speaker, NJDEP's Assistant Commissioner, Samuel Wolfe, at the 2004 Industrial Awards Breakfast.

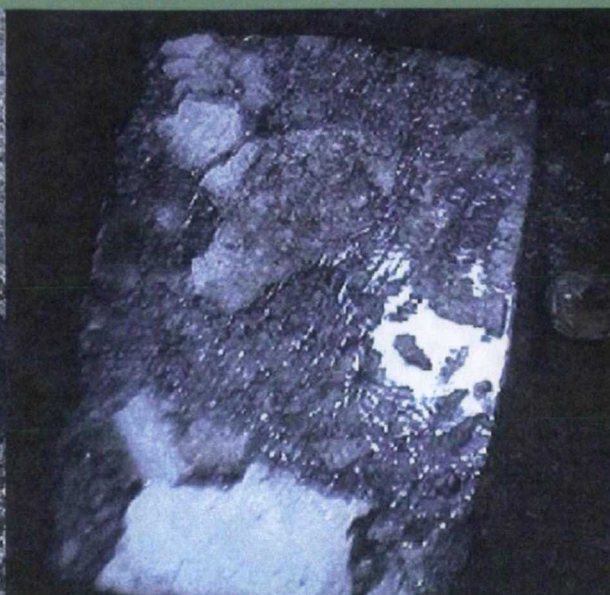


Lorrie Williams programs an ISCO Glacier portable refrigerated sampler.

**PVSC'S PATENTED FLOATABLES SAMPLING DEVICE HAS BEEN
EFFECTIVE IN DETECTECTING THE FOLLOWING:**



Sludge Blanket Discharger



Paraffin Discharger



Squid Spine & Parts Discharger



**Frank Grant
cleans his sampler
upon returning
from the field.**



**Bill Fischer prepares IU
samples to be analyzed using
our Inductively-Coupled
Argon-Plasma (ICAP)
spectrometer.**

Violations / Enforcement

- **PVSC incorporates Permittees' sample results (self-monitoring) and PVSC's sample results, and determines violation status**
- **Hundreds of violations issued per year (2003—373 total) – 1/5 are reporting violations**
- **Civil Actions filed in Superior Court of NJ as necessary (~40/yr.)**
 - **Settlement Agreement with fine**
 - **Judicial Consent Order with fine**
- **All enforcement designed to achieve ultimate compliance.**

Legal actions resulting in a suspended Permit and the IU eventually brought to compliance.

<u>Company</u>	<u>Violation/Concern</u>
Rose Color Co.	Inspectors discovered solvents continually discharged w/o treatment; high Lower Explosive Limit condition. Water to Show Cause granted. Discharge ceased.
Sun Metal Finishing	Inspectors discovered co. bypassing pretreatment and monitoring equipment; hard-piped dilution water line. Permit suspended.
CCP Inc.	Co. incurred fire; inspectors located explosive powders going into the discharge. Permit suspended.
City Barrel	Inspectors discovered co. bypassing pretreatment monitoring equipment. Permit suspended then revoked.

What Has All This Resulted In?

- **Protection of, and a cleaner NY Harbor (our discharge location)**
- **Multiple PVSC awards, including 4 consecutive AMSA Gold Awards for perfect compliance.**

Recent PVSC Awards

2004

- **New Jersey Clean Communities Council Excellence in Education Award**
- **NJ Association of Environmental Authorities Wave Award**
- **New Jersey Water Environment Association (NJWEA) Public Education Award**
- **AMSA's 2004 National Environmental Achievement Award in the Public Information & Education**

2003

- **2003 USEPA's National Pretreatment Program Excellence Award
First Place in the 100 and Greater Significant Industrial Users (SIU's) Category**
- **USEPA's Region 2 Environmental Quality Award**
- **USEPA's Clean Water Partner Award**
- **NJ Association of Environmental Authorities Wave Award**
- **National 2003 Clean Water Act Recognition Awards**
- **NJ Association of Metropolitan Sewerage Agencies' Gold Award**

Recent PVSC Awards

2002

- USEPA's National Operations & Maintenance Excellence Award First Place in the Large Secondary Treatment Category
- USEPA's Region 2 Operations & Maintenance Excellence Award Large Secondary Treatment Category
- NJ Association of Metropolitan Sewerage Agencies' Gold Award
- New Jersey Water Environment Association's Excellence Award

2001

- Association of Metropolitan Sewerage Agencies' Gold Award

2000

- Association of Metropolitan Sewerage Agencies' Gold Award
- USEPA's Region 2 Environmental Quality Award
- U.S. Small Business Administration's Vision 2000 Award

1999

- Association of Metropolitan Sewerage Agencies' Public Service & Education Award

How Will We Keep it Going?

- Educational Outreach Program (future generations)
- Continue to sponsor Household Hazardous Waste Collection days (Jersey City and Kearny completed; Passaic and Bergen Counties in the Fall)
- Satellite Monitoring Stations (early detection)
- Continually update our Rules & Regulations (11 changes so far)
- Continue our Permit Awards program (compliance incentive)
- Continue our Water Quality Sampling Program (River Restoration Dept.)
- Provide adequate training and tuition reimbursement.
- Commissioners will continue to provide us with the necessary resources (budget & personnel).



Questions / Discussion